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1997
MISSOURI
EMERGENCY SERVICE VEHICLE
CRASHES

Missouri State Highway Patrol

A division of the

Department of Public Safety

1997
MISSOURI
EMERGENCY SERVICE VEHICLE
CRASHES

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FOREWORD

This publication was produced by the Missouri State Highway Patrol at the request of the Missouri Division of Highway Safety.

It is the vision of the Missouri Division of Highway Safety to reduce the number and severity of traffic crashes occurring in Missouri by implementing the Governor's Highway Safety Program (according to the Federal Highway Safety Act of 1966) and to provide the highest quality of service to our customers through fairness, responsiveness, and dedication.

Traffic safety officials and managers of emergency vehicles should carefully review this document and analyze their own operation and accident experience to ensure that proper precautions and training measures have been implemented at their level.

If you require more information on traffic safety programs or need additional statistical information services, please forward your requests to my office.

Sincerely,

Joyce F. Marshall
Director

ACKNOWLEDGEMENTS

The Missouri Division of Highway Safety requested publication of this report to determine the magnitude, severity, and characteristics of traffic crashes involving emergency service vehicles in the State.

The primary source of information in this report was traffic crash data obtained from the Statewide Traffic Accident Records System (STARS). The Missouri State Highway Patrol, Traffic Division, is responsible for coordinating the STARS program as well as encoding all traffic crash data being reported.

Special recognition is given to all Missouri law enforcement agencies and officers who provide traffic crash investigation services on Missouri roadways and report their findings to STARS. Because of their efforts, traffic safety authorities have the capability of conducting analysis on Missouri's emergency service vehicle traffic crash problems.

Over the past few years, the ability to analyze Missouri's traffic safety problems using STARS data has been greatly enhanced, in large part, due to the Missouri Traffic Records Committee. This Committee was developed to act as an advisory body to the Missouri State Highway Patrol for upgrading and maintaining STARS.

Finally, the U.S. Department of Transportation, National Highway Traffic Safety Administration, has supported the Statistical Analysis Center's efforts to provide meaningful research services and publications to Missouri traffic safety authorities. Their financial support and technical assistance is appreciated.

A handwritten signature in black ink, reading "Martin P. Carso Jr." with a stylized flourish at the end.

Martin P. Carso, Jr., Director
Statistical Analysis Center
Missouri State Highway Patrol

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EXECUTIVE SUMMARY

The purpose of this report is to provide the Missouri State Highway Patrol, the Missouri Division of Highway Safety, and other State and local authorities with information on the problem of emergency service vehicle traffic crashes in the State of Missouri. In 1997, Missouri experienced 1,886 emergency service vehicle traffic crashes. Crashes of this nature are of special concern to traffic safety authorities because emergency service vehicles and, more importantly, their staff are critical public safety resources whose loss due to traffic crashes adversely affects the public welfare.

The primary source of data used in this study was the Missouri Statewide Traffic Accident Records System (STARS).

In 1997, there were 1,886 Missouri traffic crashes involving 1,920 emergency service vehicles. Eight persons were killed and 717 persons were injured in these traffic crashes. Of the 1,920 emergency service vehicles involved, 377 (19.6%) were on an emergency run at the time of the crash. The seriousness of these traffic crashes is compounded by the fact that the incident no doubt delayed or prevented the unit from responding to the original emergency situation.

Police vehicles account for the majority of emergency service vehicles involved in Missouri traffic crashes. Of the 1,920 emergency vehicles involved in 1997 traffic crashes, 1,544 (80.4%) were law enforcement vehicles. This finding is not surprising since there are a significantly greater number of police vehicles in operation compared to ambulances and fire vehicles. In addition, many law enforcement units patrol Missouri roadways throughout their shift, while ambulances and fire vehicles are normally stationed at fixed locations until called to respond to a situation.

Of the 1,920 emergency vehicles involved in 1997 Missouri traffic crashes, 165 (8.6%) were fire vehicles. Although no accurate count is available, the number of fire vehicles in the State is estimated to be larger than the ambulance vehicle population but much less than the police vehicle population. As with ambulances, fire vehicles made up a higher proportion of those vehicles involved in traffic crashes while on emergency runs. Of the 377 vehicles making an emergency run when involved in a traffic crash in 1997, 70 (18.6%) were vehicles of this type.

Of the 1,920 emergency service vehicles involved in 1997 Missouri traffic crashes, 188 (9.8%) were ambulances. However, ambulances do not make up a large proportion of the State's emergency service vehicle population. According to the Missouri Department of Health, Emergency Services Bureau, there were only 867 licensed ambulances in the State as of July 30, 1997. Ambulances also made up a higher proportion of emergency service vehicles involved in traffic crashes while making emergency runs. Of the 377 emergency service vehicles involved in 1997 Missouri traffic crashes while on emergency runs, 52 (13.8%) were ambulances.

INTRODUCTION

This report is one in a series which identifies the magnitude, severity, and characteristics of emergency service vehicles involved in traffic crashes occurring in the State of Missouri. It describes Missouri's emergency service vehicle traffic crash experience in 1995 - 1997 with emphasis on the most recent year (1997).

Missouri traffic safety authorities have expressed an interest in studying these types of incidents for a number of reasons. First, in a sizable portion of these incidents, the emergency service vehicles are responding to other emergency situations. In most instances, their involvement in traffic crashes either delays or totally prevents them from providing the emergency care services being requested. The timeliness of providing their services can be a critical factor in preventing further death, serious injury, and/or property damage in emergency situations.

Second, emergency service vehicles and, more importantly, the staff who operate them are critical public safety resources which the community can ill afford to lose as a result of their involvement in traffic crashes. Costs associated with vehicle replacement or repair are high because these types of vehicles are configured for emergency response (i.e., heavy suspension systems, larger engines, improved braking systems, emergency lights, siren, etc.). Even more significant are losses resulting from qualified emergency service staff being killed or injured in these traffic crashes. The loss of technically trained emergency service manpower reduces the community's capabilities to adequately respond to future emergency situations.

Finally, emergency vehicles involved in traffic crashes can result in death and injury to not only emergency vehicle staff but to other parties involved in the traffic crash.

Data used in this study were obtained from the Missouri Statewide Traffic Accident Records System (STARS). This system is maintained by the Missouri State Highway Patrol (MSHP). In accordance with State statute, law enforcement agencies are required to investigate traffic crashes occurring on public roadways if they involve a death or personal injury or property damage over \$500.00. They submit their findings on a standard traffic accident report form to the STARS system. This standard traffic accident report form contains two fields designed to identify whether the vehicles involved were emergency service vehicles, the type of emergency service vehicle (police, fire, ambulance, or other), and whether or not it was on an emergency run.

Data from the traffic accident report forms are encoded by MSHP staff in computerized files. These files were made available to the MSHP Statistical Analysis Center (SAC) staff who conducted the analysis.

It should be noted that not all motor vehicle incidents involving damage to emergency service vehicles or injury to its staff were analyzed in this study due to data non-availability. Data on traffic crashes occurring on private property, such as a private driveway, were not attainable for this analysis. In addition, certain incidents are not classified as traffic crashes. For instance, cases where police establish a roadblock and a pursued person uses their vehicle to intentionally ram the blocking police vehicle are not classified as traffic crashes and are not included in this analysis.

The findings from this study are described in the following four sections. The first section provides an overview of Missouri's emergency services traffic crash problem. The second section describes the findings from an analysis which focuses on police vehicle involvement. The third section describes fire vehicle involvement and the last section covers ambulance involvement.

1.0 EMERGENCY SERVICE VEHICLE INVOLVEMENT OVERVIEW

This section presents a series of data displays which describe Missouri's emergency service vehicle traffic crash activity. Traffic crashes involving emergency service vehicles are defined as any crash in which one or more emergency service vehicles were directly involved in the incident. Emergency service vehicles include those assigned to law enforcement agencies, fire departments, and ambulance service agencies. In addition, vehicles operated by other agencies, such as public utilities and public service corporations, are considered emergency vehicles but only when they are actually performing emergency services.

SUMMARY OF ANALYSIS

- In 1997 there were 1,886 traffic crashes involving 1,920 emergency service vehicles in the State of Missouri. Eight persons were killed and 717 persons were injured in these traffic crashes. One person was killed or injured every 12.1 hours in these types of crashes in 1997.
- Police vehicles comprise the largest number of emergency service vehicles involved in Missouri's traffic crashes. Of the 1,920 emergency service vehicles involved, 1,544 (80.4%) were police vehicles. They were involved in 1,521 traffic crashes. A total of 377 emergency service vehicles were on emergency runs when the traffic crash occurred. Of these, 232 (61.5%) were police vehicles. Law enforcement officers on-duty annual miles of travel are, no doubt, much greater than other types of emergency service providers. A large proportion of law enforcement officers are assigned to patrol Missouri's roadways throughout their normal shift of operations for crime prevention purposes as well as to provide quick response to calls for services. Normally, fire and ambulance service personnel are stationed at fixed locations from which they respond to emergency situations. In addition, there are larger numbers of police vehicles working Missouri's roadways than either ambulances or fire vehicles. The fact that law enforcement officers' on-duty miles of travel are substantially greater increases their risk of being involved in traffic crashes.
- Fire vehicles were the third most common type of emergency vehicle involved in Missouri's traffic crashes in 1997. Of the 1,920 emergency vehicles involved in 1997 Missouri traffic crashes, 165 (8.6%) were fire vehicles. They were involved in 164 traffic crashes. Of the 377 emergency vehicles on emergency run at the time of the traffic crash, 70 (18.6%) were fire vehicles.
- Ambulances were the second most frequent emergency vehicle type involved in Missouri's 1997 traffic crashes. Of the 1,920 emergency vehicles involved, 188 (9.8%) were ambulances. They were involved in 186 traffic crashes. Like fire vehicles, ambulances were more likely to be involved in a traffic crash when on an emergency run. Of the 377 emergency vehicles on emergency run when the traffic crash occurred, 13.8% were ambulances.
- Emergency vehicles classified as 'Other' made up a small proportion of those involved in Missouri's 1997 traffic crashes. Of the 1,920 emergency vehicles involved, only 23 (1.2%) were emergency vehicles classified as 'Other'.

1997 MISSOURI TRAFFIC CRASHES

EMERGENCY SERVICE (ES) VEHICLE INVOLVEMENT

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
ES VEHICLE INVOLVED	7	0.7	435	0.8	1,444	1.0	1,886	1.0
NO ES VEHICLE INVOLVED	1,022	99.3	51,344	99.2	137,513	99.0	189,879	99.0
TOTAL	1,029	100.0	51,779	100.0	138,957	100.0	191,765	100.0

TABLE 1.0.1

MISSOURI EMERGENCY SERVICE VEHICLE INVOLVED CRASHES

1995 - 1997

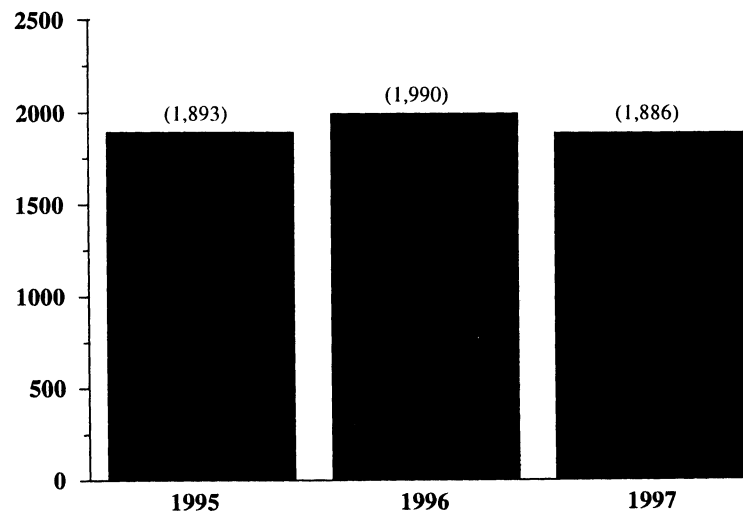


FIGURE 1.0.1

MISSOURI EMERGENCY SERVICE VEHICLE PERSONAL INJURY PROBLEM ANALYSIS CLOCK

1997

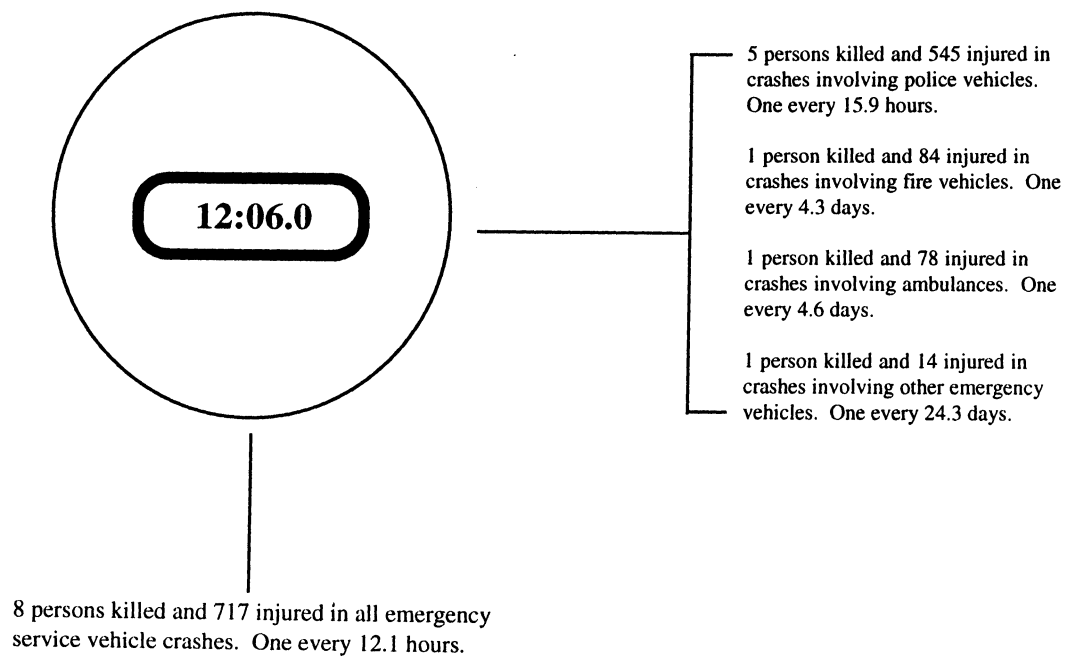


FIGURE 1.0.2

1997 MISSOURI EMERGENCY SERVICE (ES) VEHICLE CRASHES

TYPE OF EMERGENCY SERVICE VEHICLE INVOLVED

	FATAL	PERSONAL INJURY	PROPERTY DAMAGE	TOTAL	NUMBER OF ES VEHICLES INVOLVED¹
TOTAL NUMBER OF ES VEHICLE CRASHES	7	435	1,444	1,886	1,920
INVOLVING					
POLICE VEHICLE	4	351	1,166	1,521	1,544
FIRE VEHICLE	1	38	125	164	165
AMBULANCE	1	41	144	186	188
OTHER ES VEHICLE	1	6	16	23	23

¹The number of emergency service vehicles involved does not equal the number of emergency service traffic crashes since there are cases where more than one emergency service vehicle was involved in the same traffic crash. There were 1,886 traffic crashes involving 1,920 emergency service vehicles

TABLE 1.0.2

**TYPE OF EMERGENCY SERVICE VEHICLES INVOLVED IN
1997 MISSOURI TRAFFIC CRASHES**

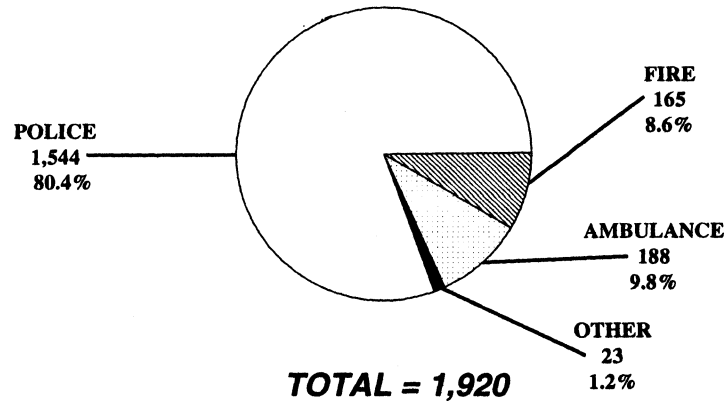
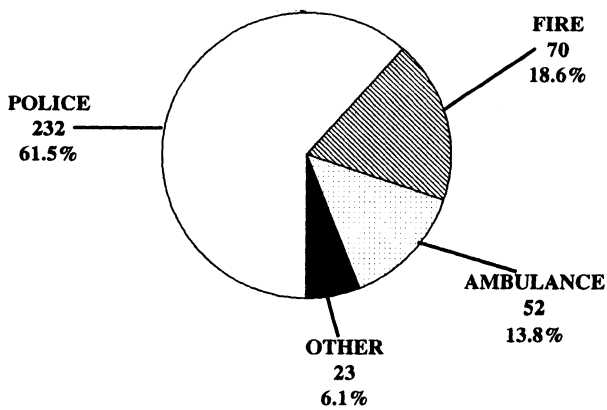


FIGURE 1.0.3

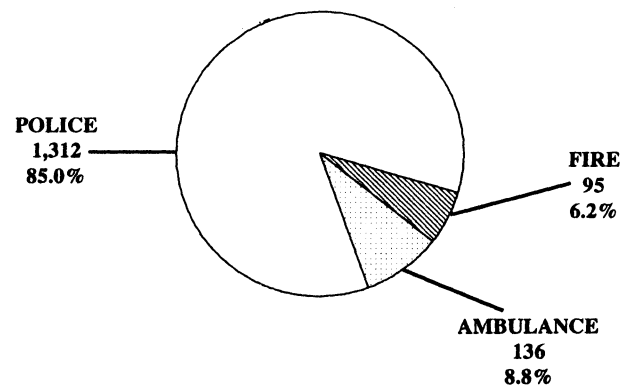
**TYPE OF EMERGENCY SERVICE
VEHICLES INVOLVED IN 1997 MISSOURI
TRAFFIC CRASHES WHILE ON
EMERGENCY RUN**



TOTAL = 377

FIGURE 1.0.4

**TYPE OF EMERGENCY SERVICE
VEHICLES INVOLVED IN 1997 MISSOURI
TRAFFIC CRASHES NOT ON
EMERGENCY RUN**



TOTAL = 1,543

FIGURE 1.0.5

2.0 POLICE VEHICLE INVOLVEMENT

This section presents a series of data displays which identify police vehicle involvement in Missouri's traffic crash activity. Police vehicle traffic crashes are defined as any crash in which one or more police vehicles were directly involved in the incident. Data displays also are provided which describe characteristics of the police vehicle drivers involved in these traffic crashes.

1997 SUMMARY ANALYSIS

- In 1997, there were 1,521 traffic crashes involving one or more police vehicles in the State of Missouri. Five persons were killed and 545 were injured in these crashes.
- In 14.9% of the traffic crashes involving police vehicles, the police vehicle was on an emergency run at the time of the incident.
- In 1997, one person was killed or injured in a police vehicle related crash every 15.9 hours in the State of Missouri.
- Of all 1997 crashes involving police vehicles, the first harmful event in 54.4% of the cases involved one motor vehicle in transport striking another motor vehicle in transport. In 17.7% of the cases, it involved a motor vehicle striking a fixed object. In 13.5% of the cases, the vehicle struck a parked vehicle.
- Of all 1997 crashes involving police vehicles, 63.5% occurred in an urban area of the State and 36.5% occurred in a rural area. All of the fatal crashes occurred in a rural area.
- Of all police vehicle drivers involved in 1997 traffic crashes, 89.9% were male and 10.1% were female. The average age of the police vehicle driver was 34.0 years.
- There were 1,544 police vehicles involved in the 1,521 traffic crashes in the State. Of these, 1,431 or 92.7% were automobiles.

1997 POLICE VEHICLE INVOLVED CRASHES

EMERGENCY RUN STATUS

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%	TOTAL NUMBER ¹		POLICE VEHICLE DRIVERS/PASSENGERS ²	
									KILLED	INJURED	KILLED	INJURED
POLICE VEHICLE ON RUN	2	50.0	73	20.8	152	13.0	227	14.9	2	122	1	68
POLICE VEHICLE NOT ON RUN	2	50.0	278	79.2	1,014	87.0	1,294	85.1	3	423	1	217
TOTAL	4	100.0	351	100.0	1,166	100.0	1,521	100.0	5	545	2	285

¹This statistic indicates the total number of persons killed and injured in a crash where one or more police vehicles were involved.

²This statistic indicates the number of police vehicle drivers and passengers killed and injured.

TABLE 2.0.1

1996 and 1997 POLICE VEHICLE INVOLVED CRASH ANALYSIS

	1996	1997	RATE OF CHANGE
FATAL	7	4	- 42.9
PERSONAL INJURY	371	351	- 5.4
PROPERTY DAMAGE	1,200	1,166	- 2.8
TOTAL	1,578	1,521	- 3.6

TABLE 2.0.2

1997 POLICE VEHICLE INVOLVED CRASHES

CRASH TYPE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
ANIMAL	0	0.0	6	1.7	120	10.3	126	8.3
BICYCLIST	0	0.0	6	1.7	5	0.4	11	0.7
FIXED OBJECT	2	50.0	39	11.1	228	19.6	269	17.7
OTHER OBJECT	0	0.0	3	0.9	36	3.1	39	2.6
PEDESTRIAN	0	0.0	10	2.9	1	0.1	11	0.7
TRAIN	0	0.0	0	0.0	1	0.1	1	0.1
VEHICLE IN TRANSPORT	2	50.0	248	70.7	578	49.6	828	54.4
VEHICLE ON OTHER ROADWAY	0	0.0	2	0.6	1	0.1	3	0.2
PARKED VEHICLE	0	0.0	22	6.3	183	15.7	205	13.5
NON-COLLISION OVERTURN	0	0.0	6	1.7	2	0.2	8	0.5
NON-COLLISION OTHER	0	0.0	9	2.6	11	0.9	20	1.3
TOTAL	4	100.0	351	100.0	1,166	100.0	1,521	100.0

TABLE 2.0.3

1997 POLICE VEHICLE INVOLVED CRASHES

AREA CLASSIFICATION BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
URBAN	0	0.0	237	67.5	729	62.5	966	63.5
RURAL	4	100.0	114	32.5	437	37.5	555	36.5
TOTAL	4	100.0	351	100.0	1,166	100.0	1,521	100.0

TABLE 2.0.4

1997 POLICE VEHICLE INVOLVED CRASHES

ROAD CURVATURE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
STRAIGHT	4	100.0	305	87.1	1,009	87.4	1,318	87.4
CURVE	0	0.0	45	12.9	145	12.6	190	12.6
UNKNOWN	0	-	1	-	12	-	13	-
TOTAL	4	100.0	351	100.0	1,166	100.0	1,521	100.0

TABLE 2.0.5

1997 POLICE VEHICLE INVOLVED CRASHES

ROAD INCLINE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
LEVEL	2	50.0	219	62.6	779	67.7	1,000	66.5
HILL	2	50.0	121	34.6	356	30.9	479	31.8
CREST	0	0.0	10	2.9	16	1.4	26	1.7
UNKNOWN	0	-	1	-	15	-	16	-
TOTAL	4	100.0	351	100.0	1,166	100.0	1,521	100.0

TABLE 2.0.6

1997 POLICE VEHICLE INVOLVED CRASHES

ROAD CONDITIONS BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
DRY	3	75.0	261	74.4	852	73.7	1,116	73.9
WET	0	0.0	60	17.1	202	17.5	262	17.3
SNOW	0	0.0	13	3.7	31	2.7	44	2.9
ICE	1	25.0	17	4.8	63	5.5	81	5.4
MUD	0	0.0	0	0.0	8	0.7	8	0.5
UNKNOWN	0	-	0	-	10	-	10	-
TOTAL	4	100.0	351	100.0	1,166	100.0	1,521	100.0

TABLE 2.0.7

1997 POLICE VEHICLE INVOLVED CRASHES

HIGHWAY CLASSIFICATION BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
INTERSTATE	1	25.0	35	10.0	112	9.6	148	9.7
U.S. HIGHWAY	0	0.0	39	11.1	100	8.6	139	9.1
STATE NUMBERED	2	50.0	54	15.4	157	13.5	213	14.0
SINGLE STATE LETTERED	1	25.0	18	5.1	57	4.9	76	5.0
DOUBLE STATE LETTERED	0	0.0	9	2.6	28	2.4	37	2.4
OUTER ROAD	0	0.0	3	0.9	15	1.3	18	1.2
COUNTY ROAD	0	0.0	31	8.8	108	9.3	139	9.1
CITY STREET	0	0.0	157	44.7	528	45.3	685	45.0
INTERSTATE LOOP	0	0.0	0	0.0	6	0.5	6	0.4
OTHER ¹	0	0.0	5	1.4	55	4.7	60	3.9
TOTAL	4	100.0	351	100.0	1,166	100.0	1,521	100.0

¹ "Other" includes types of roads that are maintained by the State as well as by local jurisdictions.

TABLE 2.0.8

1997 POLICE VEHICLE INVOLVED CRASHES

HIGHWAY CLASSIFICATION BY AREA CLASSIFICATION AND CRASH SEVERITY

	URBAN								RURAL							
	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
INTERSTATE	0	0.0	25	10.6	63	8.6	88	9.1	1	25.0	10	8.8	49	11.2	60	10.8
U.S. HIGHWAY	0	0.0	23	9.7	45	6.2	68	7.0	0	0.0	16	14.0	55	12.6	71	12.8
STATE NUMBERED	0	0.0	21	8.9	48	6.6	69	7.1	2	50.0	33	29.0	109	24.9	144	26.0
SINGLE STATE LETTERED	0	0.0	3	1.3	10	1.4	13	1.4	1	25.0	15	13.2	47	10.8	63	11.4
DOUBLE STATE LETTERED	0	0.0	2	0.8	3	0.4	5	0.5	0	0.0	7	6.1	25	5.7	32	5.8
OUTER ROAD	0	0.0	2	0.8	10	1.4	12	1.2	0	0.0	1	0.9	5	1.1	6	1.1
COUNTY ROAD	0	0.0	12	5.1	33	4.5	45	4.7	0	0.0	19	16.7	75	17.2	94	16.9
CITY STREET	0	0.0	148	62.5	472	64.8	620	64.2	0	0.0	9	7.9	56	12.8	65	11.7
INTERSTATE LOOP	0	0.0	0	0.0	3	0.4	3	0.3	0	0.0	0	0.0	3	0.7	3	0.5
OTHER ¹	0	0.0	1	0.4	42	5.8	43	4.5	0	0.0	4	3.5	13	3.0	17	3.1
TOTAL	0	0.0	237	100.0	729	100.0	966	100.0	4	0.0	114	100.0	437	100.0	555	100.0

¹"Other" includes types of roads that are maintained by the State as well as by local jurisdictions.

TABLE 2.0.9

1997 POLICE VEHICLE INVOLVED CRASHES MONTH OF YEAR

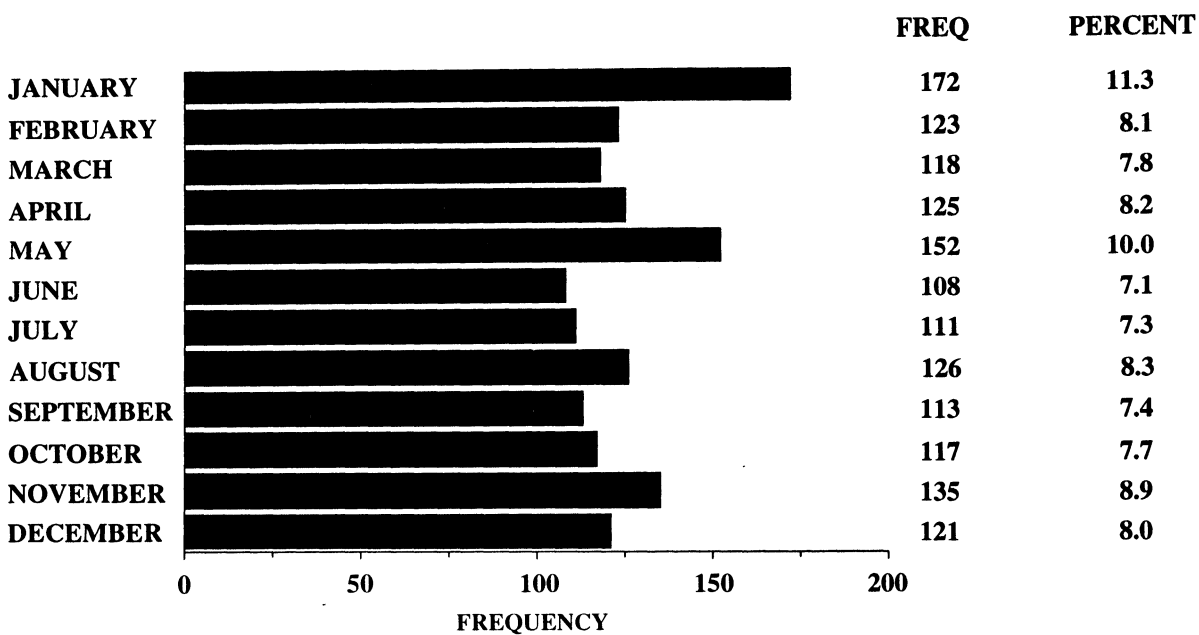
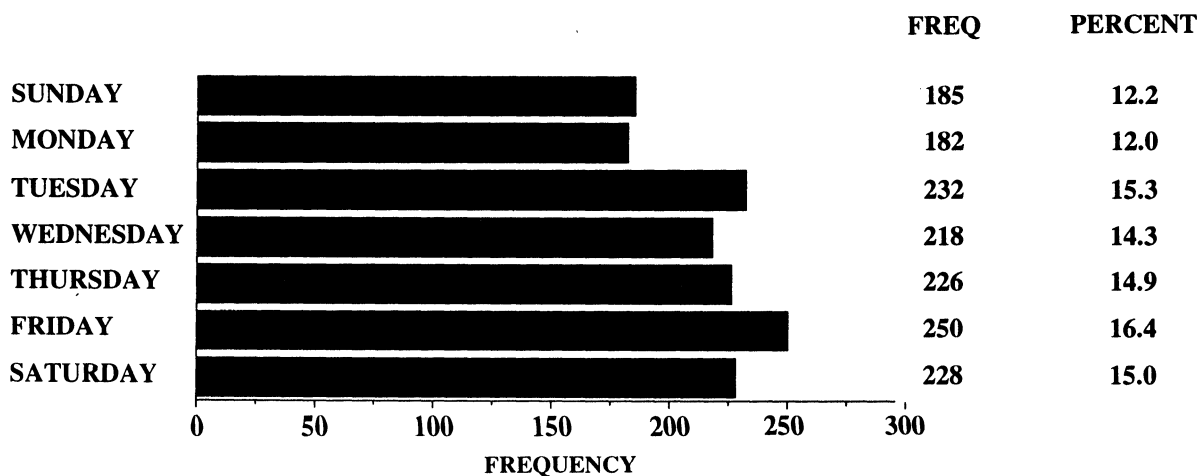


FIGURE 2.0.1

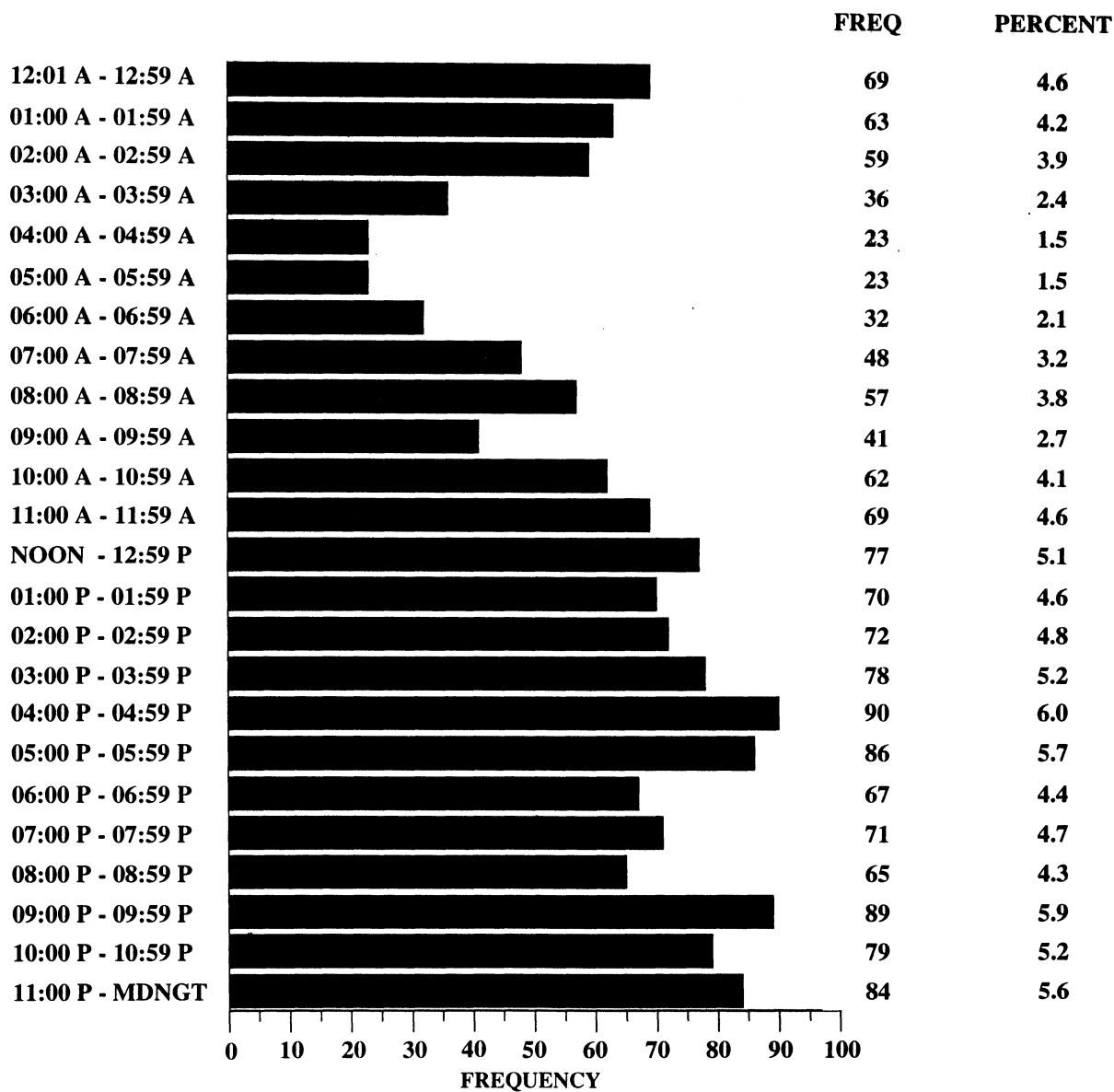
1997 POLICE VEHICLE INVOLVED CRASHES DAY OF WEEK



UNKNOWN DATA NOT INCLUDED

FIGURE 2.0.2

1997 POLICE VEHICLE INVOLVED CRASHES HOUR OF DAY



UNKNOWN DATA NOT INCLUDED

FIGURE 2.0.3

1997 MISSOURI POLICE VEHICLE CRASHES

TYPE OF CIRCUMSTANCE INVOLVED BY CRASH SEVERITY AND PERSON CLASSIFICATION¹

FATAL AND PERSONAL INJURY POLICE VEHICLE CRASHES = 355				TOTAL POLICE VEHICLE CRASHES = 1,521		
	DRIVER OF POLICE VEHICLE/ VEHICLE	OTHER DRIVER/ VEHICLE/ PEDESTRIAN	TOTAL F & PI	DRIVER OF POLICE VEHICLE/ VEHICLE	OTHER DRIVER/ VEHICLE/ PEDESTRIAN	TOTAL CRASHES
VEHICLE DEFECTS	1.1	2.8	3.9	1.1	2.8	3.9
ACCIDENT AHEAD	0.3	1.7	2.0	0.7	1.1	1.5
CONGESTION AHEAD	2.0	2.3	3.9	1.2	1.5	2.4
EXCEEDING SPEED LIMIT / TOO FAST FOR CONDITIONS	10.1	15.5	25.1	7.2	8.0	15.0
IMPROPER PASSING	0.3	0.3	0.6	0.3	0.3	0.7
VIOLATION OF STOP SIGN	1.4	5.4	6.8	0.7	2.9	3.6
WRONG SIDE NOT PASSING	1.7	1.7	3.4	0.5	1.1	1.6
FOLLOWING TOO CLOSE	1.1	6.2	7.3	1.1	3.2	4.2
IMPROPER SIGNAL	0.3	0.8	1.1	0.1	0.2	0.3
IMPROPER BACKING	0.0	1.4	1.4	1.1	2.8	3.9
IMPROPER TURN	1.1	2.0	3.1	1.4	3.0	4.5
IMPROPER LANE USAGE / CHANGE	0.6	2.3	2.8	0.7	2.4	3.1
WRONG WAY ONE-WAY STREET	0.0	0.0	0.0	0.0	0.2	0.2
IMPROPER START FROM PARK	0.0	0.3	0.3	0.0	0.3	0.3
IMPROPERLY PARKED	0.0	0.3	0.3	0.3	1.0	1.3
FAILED TO YIELD	3.7	19.4	22.8	2.6	11.3	13.8
DRINKING	0.0	8.7	8.7	0.1	4.8	4.9
DRUGS	0.0	0.3	0.3	0.0	0.3	0.3
PHYSICAL IMPAIRMENT	0.6	0.8	1.4	0.1	0.6	0.7
INATTENTION	16.3	38.0	50.7	19.4	31.6	48.7

¹This table identifies the percentage of crashes involving one or more police vehicles having a specific type of circumstance which contributed to the cause of the crash. This table further defines the percentage of crashes where the contributing circumstance was associated with the driver or his police vehicle as well as those attributed to other persons and vehicles in the crash. For instance, when examining speed involvement in 1997 Missouri police vehicle crashes, it was found that a police vehicle driver was speeding in 7.2% of the crashes. In 8.0% of the crashes another driver was speeding. In 15.0% of the crashes either a police vehicle driver, another driver, or both drivers were speeding.

TABLE 2.0.10

POLICE VEHICLES INVOLVED IN 1997 MISSOURI CRASHES

TYPE OF VEHICLE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
AUTOMOBILE	4	100.0	323	90.0	1,104	93.5	1,431	92.7
STATION WAGON	0	0.0	0	0.0	3	0.3	3	0.2
SPORT UTILITY VEHICLE	0	0.0	6	1.7	11	0.9	17	1.1
VAN / SMALL BUS	0	0.0	17	4.7	42	3.6	59	3.8
BUS	0	0.0	0	0.0	2	0.2	2	0.1
MOTORCYCLE	0	0.0	7	2.0	4	0.3	11	0.7
BICYCLE	0	0.0	0	0.0	1	0.1	1	0.1
OTHER TRANSPORT DEVICE	0	0.0	1	0.3	1	0.1	2	0.1
PICK-UP TRUCK	0	0.0	3	0.8	8	0.7	11	0.7
OTHER TRUCK	0	0.0	2	0.6	5	0.4	7	0.5
TOTAL	4	100.0	359	100.0	1,181	100.0	1,544	100.0

TABLE 2.0.11

POLICE VEHICLES INVOLVED IN 1997 MISSOURI CRASHES

DRIVER INVOLVEMENT BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
DRIVERLESS	1	25.0	24	6.7	157	13.3	182	11.8
KNOWN DRIVER INVOLVED	3	75.0	335	93.3	1,022	86.5	1,360	88.1
UNKNOWN DRIVER INVOLVED	0	0.0	0	0.0	2	0.2	2	0.1
TOTAL	4	100.0	359	100.0	1,181	100.0	1,544	100.0

TABLE 2.0.12

DRIVERS OF POLICE VEHICLES INVOLVED IN 1997 MISSOURI CRASHES

SEX OF DRIVER BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
MALE	3	100.0	307	91.6	912	89.2	1,222	89.9
FEMALE	0	0.0	28	8.4	110	10.8	138	10.1
UNKNOWN	0	-	0	-	2	-	2	-
TOTAL	3	100.0	335	100.0	1,024	100.0	1,362	100.0

TABLE 2.0.13

DRIVERS OF POLICE VEHICLES INVOLVED IN 1997 MISSOURI CRASHES

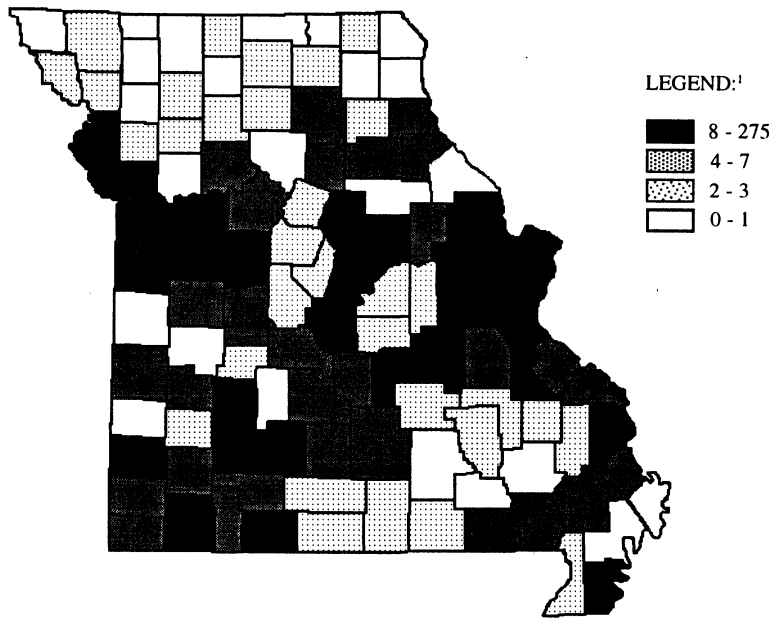
AGE OF DRIVER BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
AVERAGE AGE OF DRIVER	23.7	-	34.1	-	34.0	-	34.0	-
15 YEARS AND UNDER	0	0.0	0	0.0	0	0.0	0	0.0
16 - 20 YEARS	0	0.0	4	1.2	12	1.2	16	1.2
21 - 25 YEARS	2	66.7	49	14.7	167	16.5	218	16.2
26 - 30 YEARS	1	33.3	100	30.0	292	28.9	393	29.2
31 - 35 YEARS	0	0.0	68	20.4	173	17.1	241	17.9
36 - 40 YEARS	0	0.0	37	11.1	127	12.6	164	12.2
41 - 45 YEARS	0	0.0	23	6.9	87	8.6	110	8.2
46 - 50 YEARS	0	0.0	26	7.8	89	8.8	115	8.5
51 - 55 YEARS	0	0.0	14	4.2	42	4.2	56	4.2
56 - 60 YEARS	0	0.0	8	2.4	15	1.5	23	1.7
61 - 65 YEARS	0	0.0	2	0.6	4	0.4	6	0.5
66 YEARS AND OVER	0	0.0	2	0.6	3	0.3	5	0.4
UNKNOWN	0	-	2	-	13	-	15	-
TOTAL	3	100.0	335	100.0	1,024	100.0	1,362	100.0

TABLE 2.0.14

1997 POLICE VEHICLE INVOLVED CRASHES

COUNTY QUARTILE ANALYSIS



¹LEGEND CATEGORIES ARE BASED ON QUARTILES OF COUNTIES.

RANK	COUNTY	FREQUENCY	PERCENT	RANK	COUNTY	FREQUENCY	PERCENT
1.0	JACKSON	275	18.1	22.0	BARRY	12	0.8
2.0	ST. LOUIS	249	16.4	22.0	CRAWFORD	12	0.8
3.0	ST. LOUIS CITY	244	16.0	22.0	WARREN	12	0.8
4.0	ST. CHARLES	69	4.5	24.0	CALLAWAY	11	0.7
5.0	CLAY	49	3.2	25.5	PHELPS	10	0.7
6.0	JEFFERSON	38	2.5	25.5	POLK	10	0.7
7.0	GREENE	33	2.2	28.5	MILLER	8	0.5
8.0	JASPER	23	1.5	28.5	PEMISCOT	8	0.5
9.0	BUCHANAN	22	1.4	28.5	TANEY	8	0.5
10.0	LINCOLN	20	1.3	28.5	WEBSTER	8	0.5
11.5	COLE	18	1.2				First Quartile
11.5	PLATTE	18	1.2				Second Quartile
13.5	CAPE GIRARDEAU	17	1.1	33.0	BUTLER	7	0.5
13.5	FRANKLIN	17	1.1	33.0	NEWTON	7	0.5
16.0	BOONE	16	1.1	33.0	PULASKI	7	0.5
16.0	JOHNSON	16	1.1	33.0	STONE	7	0.5
16.0	ST. FRANCOIS	16	1.1	33.0	TEXAS	7	0.5
18.0	PETTIS	15	1.0	37.5	BENTON	6	0.4
19.5	CASS	13	0.9	37.5	LACLEDE	6	0.4
19.5	LAFAYETTE	13	0.9				

RANK	COUNTY	FREQUENCY	PERCENT	RANK	COUNTY	FREQUENCY	PERCENT
37.5	MARION	6	0.4	83.5	DADE	2	0.1
37.5	WASHINGTON	6	0.4	83.5	DAVISS	2	0.1
44.5	CAMDEN	5	0.3	83.5	DUNKLIN	2	0.1
44.5	CEDAR	5	0.3	83.5	HOWARD	2	0.1
44.5	HENRY	5	0.3	83.5	MARIES	2	0.1
44.5	MC DONALD	5	0.3	83.5	MERCER	2	0.1
44.5	MACON	5	0.3	83.5	MONITEAU	2	0.1
44.5	PERRY	5	0.3	83.5	MORGAN	2	0.1
44.5	STE. GENEVIEVE	5	0.3	83.5	NODAWAY	2	0.1
44.5	SALINE	5	0.3	83.5	OREGON	2	0.1
44.5	STODDARD	5	0.3	83.5	OSAGE	2	0.1
44.5	WRIGHT	5	0.3	83.5	REYNOLDS	2	0.1
54.5	CARROLL	4	0.3	83.5	SCOTLAND	2	0.1
54.5	CHRISTIAN	4	0.3	83.5	SHELBY	2	0.1
54.5	LAWRENCE	4	0.3	83.5	SULLIVAN	2	0.1
54.5	MONROE	4	0.3				
54.5	MONTGOMERY	4	0.3				Third Quartile
54.5	RALLS	4	0.3				
54.5	RANDOLPH	4	0.3				Fourth Quartile
54.5	RIPLEY	4	0.3	97.5	ATCHISON	1	0.1
54.5	SCOTT	4	0.3	97.5	AUDRAIN	1	0.1
54.5	VERNON	4	0.3	97.5	CARTER	1	0.1
			Second Quartile	97.5	CHARITON	1	0.1
				97.5	CLARK	1	0.1
			Third Quartile	97.5	DALLAS	1	0.1
67.5	ADAIR	3	0.2	97.5	DE KALB	1	0.1
67.5	ANDREW	3	0.2	97.5	GENTRY	1	0.1
67.5	CALDWELL	3	0.2	97.5	HARRISON	1	0.1
67.5	CLINTON	3	0.2	97.5	RAY	1	0.1
67.5	COOPER	3	0.2	97.5	SCHUYLER	1	0.1
67.5	DENT	3	0.2	97.5	WORTH	1	0.1
67.5	DOUGLAS	3	0.2	109.5	BARTON	0	0.0
67.5	GASCONADE	3	0.2	109.5	BATES	0	0.0
67.5	HICKORY	3	0.2	109.5	GRUNDY	0	0.0
67.5	HOLT	3	0.2	109.5	KNOX	0	0.0
67.5	HOWELL	3	0.2	109.5	LEWIS	0	0.0
67.5	IRON	3	0.2	109.5	MISSISSIPPI	0	0.0
67.5	LINN	3	0.2	109.5	NEW MADRID	0	0.0
67.5	LIVINGSTON	3	0.2	109.5	PIKE	0	0.0
67.5	MADISON	3	0.2	109.5	PUTNAM	0	0.0
67.5	OZARK	3	0.2	109.5	ST. CLAIR	0	0.0
83.5	BOLLINGER	2	0.1	109.5	SHANNON	0	0.0
				109.5	WAYNE	0	0.0

TABLE 2.0.15

3.0 FIRE VEHICLE INVOLVEMENT

This section presents a series of data displays which identify fire vehicle involvement in Missouri's traffic crash activity. Fire vehicle traffic crashes are defined as any crash in which one or more fire vehicles were directly involved in the incident. Data displays also are provided which describe characteristics of the fire vehicle drivers involved in these traffic crashes.

1997 SUMMARY ANALYSIS

- In 1997, there were 164 traffic crashes involving one or more fire vehicles in the State of Missouri. One person was killed and 84 were injured in these crashes.
- In 42.1% of the traffic crashes involving fire vehicles, the fire vehicle was on an emergency run at the time of the incident.
- In 1997, one person was killed or injured in a fire vehicle related crash every 4.3 days in the State of Missouri.
- Of all 1997 crashes involving fire vehicles, the first harmful event in 60.4% of the cases involved one motor vehicle in transport striking another motor vehicle in transport. In 20.7% of the cases, it involved a motor vehicle striking a parked vehicle. In 12.8% of the cases, the vehicle struck a fixed object.
- Of all 1997 crashes involving fire vehicles, 75.6% occurred in an urban area of the State and 24.4% occurred in a rural area.
- Of all fire vehicle drivers involved in 1997 traffic crashes, 93.1% were male and 6.9% were female. The average age of the fire vehicle driver was 37.1 years.

1997 FIRE VEHICLE INVOLVED CRASHES

EMERGENCY RUN STATUS

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%	TOTAL NUMBER ¹		FIRE VEHICLE DRIVERS/PASSENGERS ²	
	KILLED	INJURED	KILLED	INJURED								
FIRE VEHICLE ON RUN	1	100.0	24	63.2	44	35.2	69	42.1	1	54	0	18
FIRE VEHICLE NOT ON RUN	0	0.0	14	36.8	81	64.8	95	57.9	0	30	0	10
TOTAL	1	100.0	38	100.0	125	100.0	164	100.0	1	84	0	28

¹This statistic indicates the total number of persons killed and injured in a crash where one or more fire vehicles were involved.

²This statistic indicates the number of fire vehicle drivers and passengers killed and injured.

TABLE 3.0.1

1996 and 1997 FIRE VEHICLE INVOLVED CRASH ANALYSIS

	1996	1997	RATE OF CHANGE
FATAL	2	1	- 50.0
PERSONAL INJURY	40	38	- 5.0
PROPERTY DAMAGE	171	125	- 26.9
TOTAL	213	164	- 23.0

TABLE 3.0.2

1997 FIRE VEHICLE INVOLVED CRASHES

CRASH TYPE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
ANIMAL	0	0.0	0	0.0	2	1.6	2	1.2
BICYCLIST	0	0.0	0	0.0	0	0.0	0	0.0
FIXED OBJECT	0	0.0	3	7.9	18	14.4	21	12.8
OTHER OBJECT	0	0.0	0	0.0	1	0.8	1	0.6
PEDESTRIAN	0	0.0	0	0.0	0	0.0	0	0.0
TRAIN	0	0.0	0	0.0	0	0.0	0	0.0
VEHICLE IN TRANSPORT	1	100.0	29	76.3	69	55.2	99	60.4
VEHICLE ON OTHER ROADWAY	0	0.0	1	2.6	0	0.0	1	0.6
PARKED VEHICLE	0	0.0	1	2.6	33	26.4	34	20.7
NON-COLLISION OVERTURN	0	0.0	3	7.9	1	0.8	4	2.4
NON-COLLISION OTHER	0	0.0	1	2.6	1	0.8	2	1.2
TOTAL	1	100.0	38	100.0	125	100.0	164	100.0

TABLE 3.0.3

1997 FIRE VEHICLE INVOLVED CRASHES

AREA CLASSIFICATION BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
URBAN	0	0.0	25	65.8	99	79.2	124	75.6
RURAL	1	100.0	13	34.2	26	20.8	40	24.4
TOTAL	1	100.0	38	100.0	125	100.0	164	100.0

TABLE 3.0.4

1997 FIRE VEHICLE INVOLVED CRASHES

ROAD CURVATURE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
STRAIGHT	0	0.0	35	92.1	111	90.2	146	90.1
CURVE	1	100.0	3	7.9	12	9.8	16	9.9
UNKNOWN	0	-	0	-	2	-	2	-
TOTAL	1	100.0	38	100.0	125	100.0	164	100.0

TABLE 3.0.5

1997 FIRE VEHICLE INVOLVED CRASHES

ROAD INCLINE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
LEVEL	0	0.0	23	60.5	86	69.9	109	67.3
HILL	1	100.0	13	34.2	35	28.5	49	30.3
CREST	0	0.0	2	5.3	2	1.6	4	2.4
UNKNOWN	0	-	0	-	2	-	2	-
TOTAL	1	100.0	38	100.0	125	100.0	164	100.0

TABLE 3.0.6

1997 FIRE VEHICLE INVOLVED CRASHES

ROAD CONDITIONS BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
DRY	0	0.0	24	63.2	91	72.8	115	70.1
WET	1	100.0	12	31.6	26	20.8	39	23.8
SNOW	0	0.0	1	2.6	5	4.0	6	3.7
ICE	0	0.0	1	2.6	3	2.4	4	2.4
MUD	0	0.0	0	0.0	0	0.0	0	0.0
UNKNOWN	0	-	0	-	0	-	0	-
TOTAL	1	100.0	38	100.0	125	100.0	164	100.0

TABLE 3.0.7

1997 FIRE VEHICLE INVOLVED CRASHES

HIGHWAY CLASSIFICATION BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
INTERSTATE	1	100.0	1	2.6	6	4.8	8	4.9
U.S. HIGHWAY	0	0.0	4	10.5	13	10.4	17	10.4
STATE NUMBERED	0	0.0	2	5.3	10	8.0	12	7.3
SINGLE STATE LETTERED	0	0.0	5	13.2	5	4.0	10	6.1
DOUBLE STATE LETTERED	0	0.0	1	2.6	1	0.8	2	1.2
OUTER ROAD	0	0.0	1	2.6	1	0.8	2	1.2
COUNTY ROAD	0	0.0	7	18.4	10	8.0	17	10.4
CITY STREET	0	0.0	17	44.7	76	60.8	93	56.7
INTERSTATE LOOP	0	0.0	0	0.0	1	0.8	1	0.6
OTHER ¹	0	0.0	0	0.0	2	1.6	2	1.2
TOTAL	1	100.0	38	100.0	125	100.0	164	100.0

¹ "Other" includes types of roads that are maintained by the State as well as by local jurisdictions.

TABLE 3.0.8

1997 FIRE VEHICLE INVOLVED CRASHES

HIGHWAY CLASSIFICATION BY AREA CLASSIFICATION AND CRASH SEVERITY

	URBAN								RURAL							
	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
INTERSTATE	0	0.0	0	0.0	3	3.0	3	2.4	1	100.0	1	7.7	3	11.5	5	12.5
U.S. HIGHWAY	0	0.0	2	8.0	9	9.1	11	8.9	0	0.0	2	15.4	4	15.4	6	15.0
STATE NUMBERED	0	0.0	2	8.0	6	6.1	8	6.5	0	0.0	0	0.0	4	15.4	4	10.0
SINGLE STATE LETTERED	0	0.0	3	12.0	2	2.0	5	4.0	0	0.0	2	15.4	3	11.5	5	12.5
DOUBLE STATE LETTERED	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	7.7	1	3.9	2	5.0
OUTER ROAD	0	0.0	0	0.0	1	1.0	1	0.8	0	0.0	1	7.7	0	0.0	1	2.5
COUNTY ROAD	0	0.0	1	4.0	3	3.0	4	3.2	0	0.0	6	46.2	7	26.9	13	32.5
CITY STREET	0	0.0	17	68.0	75	75.8	92	74.2	0	0.0	0	0.0	1	3.9	1	2.5
INTERSTATE LOOP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	3.9	1	2.5
OTHER ¹	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	7.7	2	5.0
TOTAL	0	0.0	25	100.0	99	100.0	124	100.0	1	100.0	13	100.0	26	100.0	40	100.0

¹ "Other" includes types of roads that are maintained by the State as well as by local jurisdictions.

TABLE 3.0.9

**1997 FIRE VEHICLE INVOLVED CRASHES
MONTH OF YEAR**

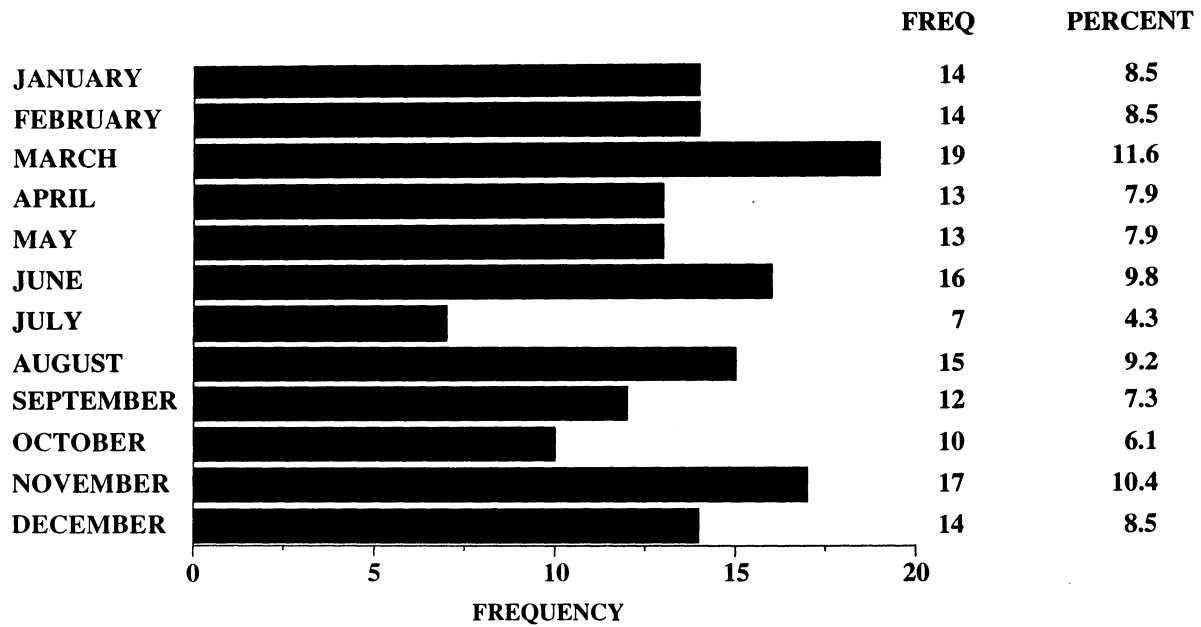


FIGURE 3.0.1

**1997 FIRE VEHICLE INVOLVED CRASHES
DAY OF WEEK**

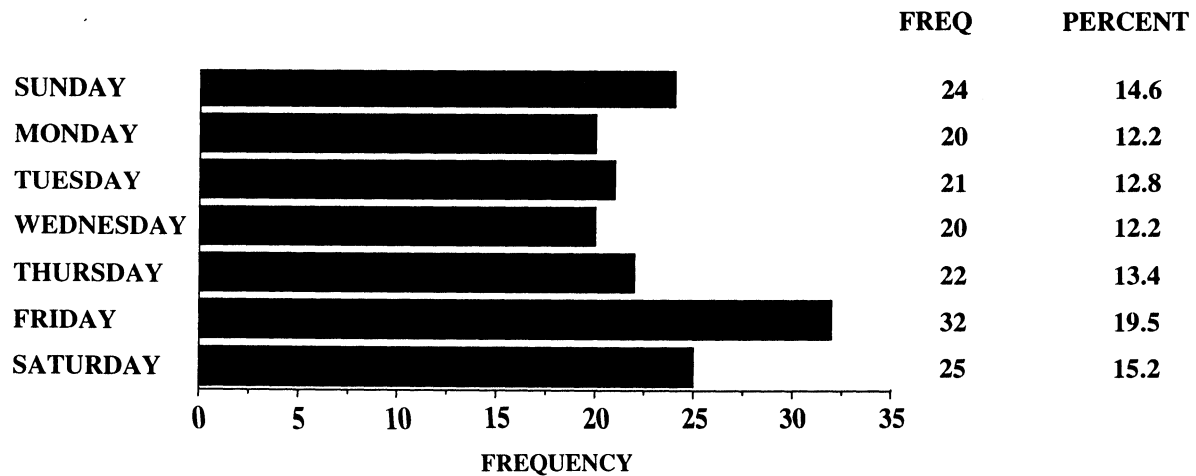
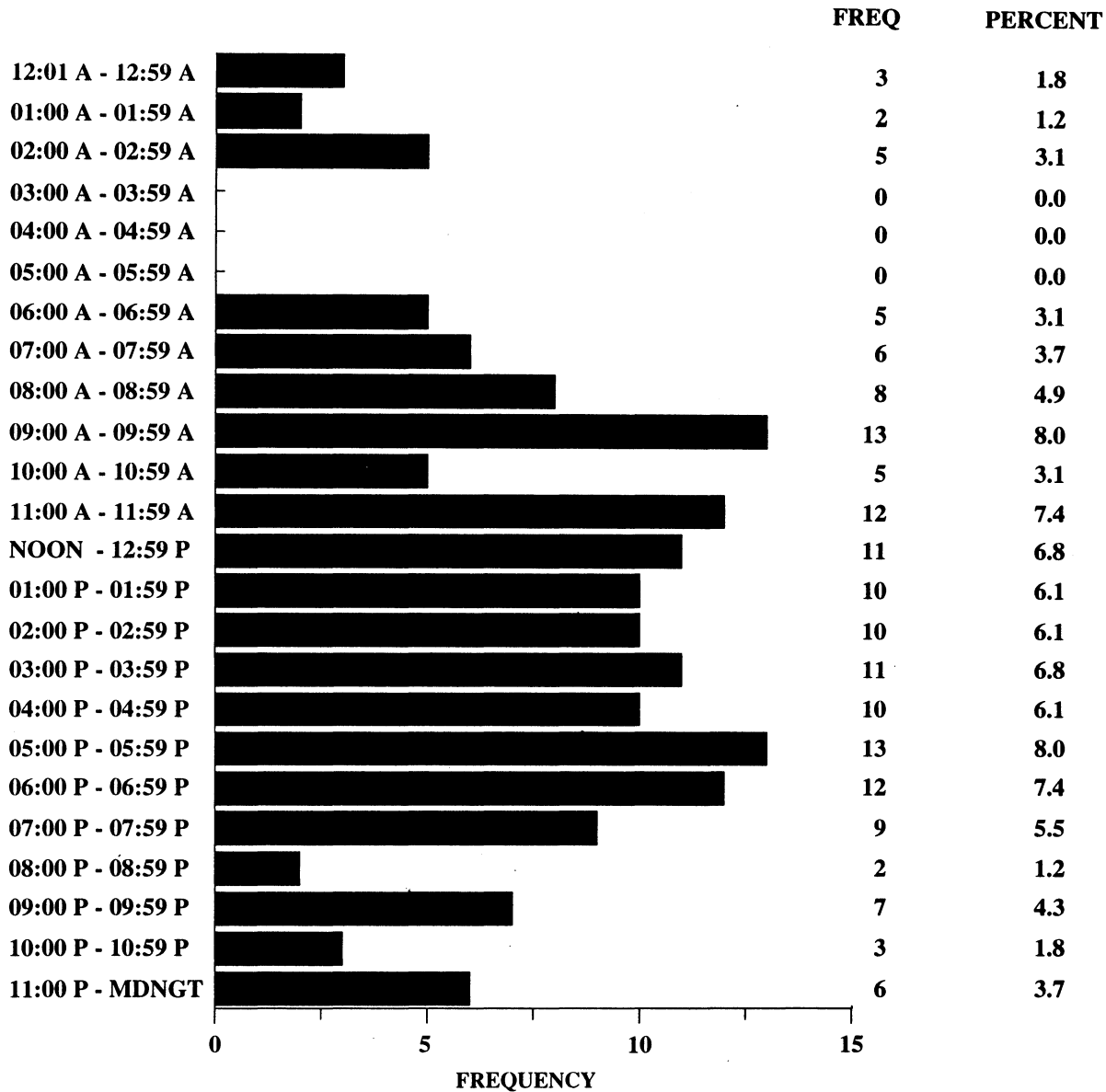


FIGURE 3.0.2

1997 FIRE VEHICLE INVOLVED CRASHES HOUR OF DAY



UNKNOWN DATA NOT INCLUDED

FIGURE 3.0.3

1997 MISSOURI FIRE VEHICLE CRASHES

TYPE OF CIRCUMSTANCE INVOLVED BY CRASH SEVERITY AND PERSON CLASSIFICATION¹

FATAL AND PERSONAL INJURY FIRE VEHICLE CRASHES = 39				TOTAL FIRE VEHICLE CRASHES = 164		
	DRIVER OF FIRE VEHICLE/ VEHICLE	OTHER DRIVER/ VEHICLE/ PEDESTRIAN	TOTAL F & PI	DRIVER OF FIRE VEHICLE/ VEHICLE	OTHER DRIVER/ VEHICLE/ PEDESTRIAN	TOTAL CRASHES
VEHICLE DEFECTS	2.6	0.0	2.6	3.7	1.8	5.5
ACCIDENT AHEAD	5.1	5.1	5.1	2.4	1.8	3.0
CONGESTION AHEAD	0.0	0.0	0.0	1.8	0.6	1.8
EXCEEDING SPEED LIMIT / TOO FAST FOR CONDITIONS	2.6	7.7	10.3	1.2	6.7	7.9
IMPROPER PASSING	0.0	0.0	0.0	0.0	0.6	0.6
VIOLATION OF STOP SIGN	2.6	10.3	12.8	3.7	3.7	7.3
WRONG SIDE NOT PASSING	2.6	5.1	7.7	0.6	1.2	1.8
FOLLOWING TOO CLOSE	0.0	5.1	5.1	0.6	3.7	4.3
IMPROPER SIGNAL	0.0	0.0	0.0	0.0	0.0	0.0
IMPROPER BACKING	0.0	0.0	0.0	1.2	1.2	2.4
IMPROPER TURN	0.0	0.0	0.0	3.0	1.8	4.9
IMPROPER LANE USAGE/ CHANGE	0.0	0.0	0.0	0.6	1.2	1.8
WRONG WAY ONE-WAY STREET	0.0	0.0	0.0	0.0	0.0	0.0
IMPROPER START FROM PARK	0.0	0.0	0.0	0.0	0.0	0.0
IMPROPERLY PARKED	0.0	0.0	0.0	1.8	3.0	4.9
FAILED TO YIELD	7.7	28.2	35.9	3.7	18.3	20.7
DRINKING	0.0	7.7	7.7	0.0	3.7	3.7
DRUGS	0.0	0.0	0.0	0.0	0.0	0.0
PHYSICAL IMPAIRMENT	2.6	0.0	2.6	0.6	0.0	0.6
INATTENTION	20.5	43.6	59.0	22.6	32.3	50.6

¹This table identifies the percentage of crashes involving one or more fire vehicles having a specific type of circumstance which contributed to the cause of the crash. This table further defines the percentage of crashes where the contributing circumstance was associated with the driver or his fire vehicle as well as those attributed to other persons and vehicles in the crash. For instance, when examining speed involvement in 1997 Missouri fire vehicle crashes, it was found that a fire vehicle driver was speeding in 1.2% of the crashes. In 6.7% of the crashes another driver was speeding. In 7.9% of the crashes either a fire vehicle driver, another driver, or both drivers were speeding.

TABLE 3.0.10

FIRE VEHICLES INVOLVED IN 1997 MISSOURI CRASHES

TYPE OF VEHICLE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
AUTOMOBILE	0	0.0	7	18.0	13	10.6	20	12.3
STATION WAGON	0	0.0	0	0.0	2	1.6	2	1.2
SPORT UTILITY VEHICLE	0	0.0	4	10.3	7	5.7	11	6.8
VAN / SMALL BUS	0	0.0	0	0.0	2	1.6	2	1.2
OTHER TRANSPORT DEVICE	0	0.0	6	15.4	11	8.9	17	10.4
PICK-UP TRUCK	0	0.0	5	12.8	13	10.6	18	11.0
OTHER TRUCK	1	100.0	17	43.6	75	61.0	93	57.1
UNKNOWN	0	-	0	-	2	-	2	-
TOTAL	1	100.0	39	100.0	125	100.0	165	100.0

TABLE 3.0.11

FIRE VEHICLES INVOLVED IN 1997 MISSOURI CRASHES

DRIVER INVOLVEMENT BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
DRIVERLESS	0	0.0	2	5.1	16	12.8	18	10.9
KNOWN DRIVER INVOLVED	1	100.0	37	94.9	107	85.6	145	87.9
UNKNOWN DRIVER INVOLVED	0	0.0	0	0.0	2	1.6	2	1.2
TOTAL	1	100.0	39	100.0	125	100.0	165	100.0

TABLE 3.0.12

DRIVERS OF FIRE VEHICLES INVOLVED IN 1997 MISSOURI CRASHES

SEX OF DRIVER BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
MALE	1	100.0	36	97.3	98	91.6	135	93.1
FEMALE	0	0.0	1	2.7	9	8.4	10	6.9
UNKNOWN	0	-	0	-	2	-	2	-
TOTAL	1	100.0	37	100.0	109	100.0	147	100.0

TABLE 3.0.13

DRIVERS OF FIRE VEHICLES INVOLVED IN 1997 MISSOURI CRASHES

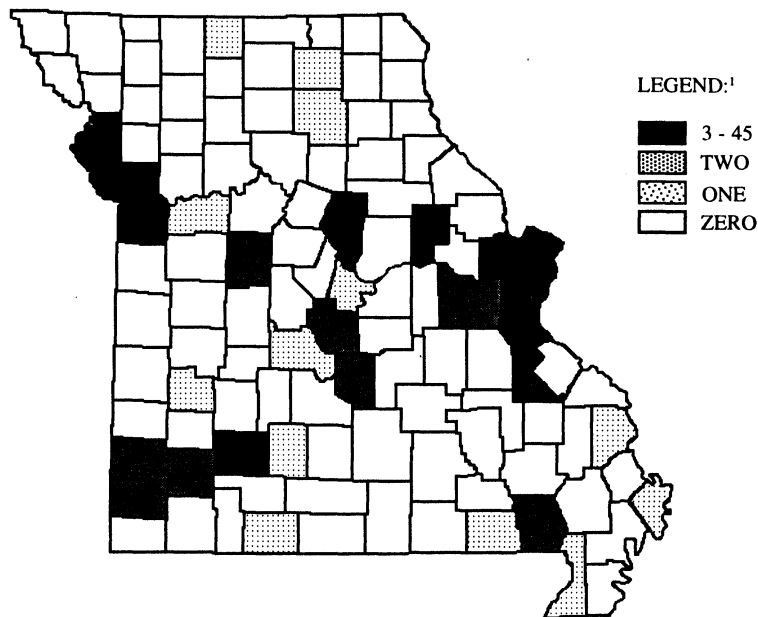
AGE OF DRIVER BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
AVERAGE AGE OF DRIVER	28.0	-	36.3	-	37.5	-	37.1	-
15 YEARS AND UNDER	0	0.0	0	0.0	0	0.0	0	0.0
16 - 20 YEARS	0	0.0	1	2.7	2	1.9	3	2.1
21 - 25 YEARS	0	0.0	4	10.8	6	5.7	10	7.0
26 - 30 YEARS	1	100.0	5	13.5	17	16.2	23	16.1
31 - 35 YEARS	0	0.0	6	16.2	22	21.0	28	19.6
36 - 40 YEARS	0	0.0	9	24.3	23	21.9	32	22.4
41 - 45 YEARS	0	0.0	9	24.3	17	16.2	26	18.2
46 - 50 YEARS	0	0.0	1	2.7	8	7.6	9	6.3
51 - 55 YEARS	0	0.0	1	2.7	4	3.8	5	3.5
56 - 60 YEARS	0	0.0	0	0.0	4	3.8	4	2.8
61 - 65 YEARS	0	0.0	1	2.7	1	1.0	2	1.4
66 YEARS AND OVER	0	0.0	0	0.0	1	1.0	1	0.7
UNKNOWN	0	-	0	-	4	-	4	-
TOTAL	1	100.0	37	100.0	109	100.0	147	100.0

TABLE 3.0.14

1997 FIRE VEHICLE INVOLVED CRASHES

COUNTY QUARTILE ANALYSIS



¹LEGEND CATEGORIES ARE BASED ON QUARTILES OF COUNTIES.

RANK	COUNTY	FREQUENCY	PERCENT	RANK	COUNTY	FREQUENCY	PERCENT
1.0	JACKSON	45	27.4	16.5	NEWTON	2	1.2
2.0	ST. LOUIS CITY	28	17.1	16.5	PETTIS	2	1.2
3.0	ST. LOUIS	21	12.8	16.5	PULASKI	2	1.2
4.0	BOONE	8	4.9	Second Quartile			
5.5	JEFFERSON	7	4.3	Third Quartile			
5.5	ST. CHARLES	7	4.3	27.0	ADAIR	1	0.6
7.0	CLAY	4	2.4	27.0	CAMDEN	1	0.6
10.0	BUCHANAN	3	1.8	27.0	CAPE GIRARDEAU	1	0.6
10.0	GREENE	3	1.8	27.0	CEDAR	1	0.6
10.0	MONTGOMERY	3	1.8	27.0	COLE	1	0.6
10.0	PLATTE	3	1.8	27.0	DUNKLIN	1	0.6
10.0	ST. FRANCOIS	3	1.8	27.0	LAFAYETTE	1	0.6
First Quartile				27.0	MACON	1	0.6
Second Quartile				27.0	MERCER	1	0.6
16.5	BUTLER	2	1.2	27.0	MISSISSIPPI	1	0.6
16.5	FRANKLIN	2	1.2	27.0	RIPLEY	1	0.6
16.5	JASPER	2	1.2	27.0	TANEY	1	0.6
16.5	LAWRENCE	2	1.2	27.0	WEBSTER	1	0.6
16.5	MILLER	2	1.2	Third Quartile			

RANK	COUNTY	FREQUENCY	PERCENT	RANK	COUNTY	FREQUENCY	PERCENT
Fourth Quartile				74.5	LIVINGSTON	0	0.0
74.5	ANDREW	0	0.0	74.5	MC DONALD	0	0.0
74.5	ATCHISON	0	0.0	74.5	MADISON	0	0.0
74.5	AUDRAIN	0	0.0	74.5	MARIES	0	0.0
74.5	BARRY	0	0.0	74.5	MARION	0	0.0
74.5	BARTON	0	0.0	74.5	MONITEAU	0	0.0
74.5	BATES	0	0.0	74.5	MONROE	0	0.0
74.5	BENTON	0	0.0	74.5	MORGAN	0	0.0
74.5	BOLLINGER	0	0.0	74.5	NEW MADRID	0	0.0
74.5	CALDWELL	0	0.0	74.5	NODAWAY	0	0.0
74.5	CALLAWAY	0	0.0	74.5	OREGON	0	0.0
74.5	CARROLL	0	0.0	74.5	OSAGE	0	0.0
74.5	CARTER	0	0.0	74.5	OZARK	0	0.0
74.5	CASS	0	0.0	74.5	PEMISCOT	0	0.0
74.5	CHARITON	0	0.0	74.5	PERRY	0	0.0
74.5	CHRISTIAN	0	0.0	74.5	PHELPS	0	0.0
74.5	CLARK	0	0.0	74.5	PIKE	0	0.0
74.5	CLINTON	0	0.0	74.5	POLK	0	0.0
74.5	COOPER	0	0.0	74.5	PUTNAM	0	0.0
74.5	CRAWFORD	0	0.0	74.5	RALLS	0	0.0
74.5	DADE	0	0.0	74.5	RANDOLPH	0	0.0
74.5	DALLAS	0	0.0	74.5	RAY	0	0.0
74.5	DAVIESS	0	0.0	74.5	REYNOLDS	0	0.0
74.5	DE KALB	0	0.0	74.5	ST. CLAIR	0	0.0
74.5	DENT	0	0.0	74.5	STE. GENEVIEVE	0	0.0
74.5	DOUGLAS	0	0.0	74.5	SALINE	0	0.0
74.5	GASCONADE	0	0.0	74.5	SCHUYLER	0	0.0
74.5	GENTRY	0	0.0	74.5	SCOTLAND	0	0.0
74.5	GRUNDY	0	0.0	74.5	SCOTT	0	0.0
74.5	HARRISON	0	0.0	74.5	SHANNON	0	0.0
74.5	HENRY	0	0.0	74.5	SHELBY	0	0.0
74.5	HICKORY	0	0.0	74.5	STODDARD	0	0.0
74.5	HOLT	0	0.0	74.5	STONE	0	0.0
74.5	HOWARD	0	0.0	74.5	SULLIVAN	0	0.0
74.5	HOWELL	0	0.0	74.5	TEXAS	0	0.0
74.5	IRON	0	0.0	74.5	VERNON	0	0.0
74.5	JOHNSON	0	0.0	74.5	WARREN	0	0.0
74.5	KNOX	0	0.0	74.5	WASHINGTON	0	0.0
74.5	LACLEDE	0	0.0	74.5	WAYNE	0	0.0
74.5	LEWIS	0	0.0	74.5	WORTH	0	0.0
74.5	LINCOLN	0	0.0	74.5	WRIGHT	0	0.0
74.5	LINN	0	0.0				

TABLE 3.0.15

4.0 AMBULANCE INVOLVEMENT

This section presents a series of data displays which identify ambulance involvement in Missouri's traffic crash activity. Ambulance traffic crashes are defined as any crash in which one or more ambulances were directly involved in the incident. Data displays also are provided which describe characteristics of the ambulance drivers involved in these traffic crashes.

1997 SUMMARY ANALYSIS

- In 1997, there were 186 traffic crashes involving one or more ambulances in the State of Missouri. One person was killed and 78 were injured in these crashes.
- In 28.0% of the traffic crashes involving ambulances, the ambulance was on an emergency run at the time of the incident.
- In 1997, one person was killed or injured in an ambulance related crash every 4.6 days in the State of Missouri.
- Of all 1997 crashes involving ambulances, the first harmful event in 67.7% of the cases involved one motor vehicle in transport striking another motor vehicle in transport. In 13.4% of the cases, it involved a motor vehicle striking a parked vehicle. In 8.1% of the cases, the vehicle struck a fixed object.
- Of all 1997 crashes involving ambulances, 68.3% occurred in an urban area of the State and 31.7% occurred in a rural area.
- Of all ambulance drivers involved in 1997 traffic crashes, 67.4% were male and 32.6% were female. The average age of the ambulance driver was 31.6 years.

1997 AMBULANCE INVOLVED CRASHES

EMERGENCY RUN STATUS

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%	TOTAL NUMBER ¹		AMBULANCE DRIVERS/PASSENGERS ²	
									KILLED	INJURED	KILLED	INJURED
AMBULANCE ON RUN	1	100.0	15	36.6	36	25.0	52	28.0	1	30	0	14
AMBULANCE NOT ON RUN	0	0.0	26	63.4	108	75.0	134	72.0	0	48	0	20
TOTAL	1	100.0	41	100.0	144	100.0	186	100.0	1	78	0	34

¹This statistic indicates the total number of persons killed and injured in a crash where one or more ambulances were involved.

²This statistic indicates the number of ambulance drivers and passengers killed and injured.

TABLE 4.0.1

1996 and 1997 AMBULANCE INVOLVED CRASH ANALYSIS

	1996	1997	RATE OF CHANGE
FATAL	0	1	+ (1)
PERSONAL INJURY	56	41	- 26.8
PROPERTY DAMAGE	140	144	+ 2.9
TOTAL	196	186	- 5.1

TABLE 4.0.2

1997 AMBULANCE INVOLVED CRASHES

CRASH TYPE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
ANIMAL	0	0.0	3	7.3	11	7.6	14	7.5
BICYCLIST	0	0.0	0	0.0	0	0.0	0	0.0
FIXED OBJECT	0	0.0	1	2.4	14	9.7	15	8.1
OTHER OBJECT	0	0.0	0	0.0	0	0.0	0	0.0
PEDESTRIAN	0	0.0	4	9.8	0	0.0	4	2.2
TRAIN	0	0.0	0	0.0	0	0.0	0	0.0
VEHICLE IN TRANSPORT	1	100.0	31	75.6	94	65.3	126	67.7
VEHICLE ON OTHER ROADWAY	0	0.0	1	2.4	0	0.0	1	0.5
PARKED VEHICLE	0	0.0	0	0.0	25	17.4	25	13.4
NON-COLLISION OVERTURN	0	0.0	1	2.4	0	0.0	1	0.5
NON-COLLISION OTHER	0	0.0	0	0.0	0	0.0	0	0.0
TOTAL	1	100.0	41	100.0	144	100.0	186	100.0

TABLE 4.0.3

1997 AMBULANCE INVOLVED CRASHES

AREA CLASSIFICATION BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
URBAN	0	0.0	24	58.5	103	71.5	127	68.3
RURAL	1	100.0	17	41.5	41	28.5	59	31.7
TOTAL	1	100.0	41	100.0	144	100.0	186	100.0

TABLE 4.0.4

1997 AMBULANCE INVOLVED CRASHES

ROAD CURVATURE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
STRAIGHT	1	100.0	39	95.1	120	84.5	160	87.0
CURVE	0	0.0	2	4.9	22	15.5	24	13.0
UNKNOWN	0	-	0	-	2	-	2	-
TOTAL	1	100.0	41	100.0	144	100.0	186	100.0

TABLE 4.0.5

1997 AMBULANCE INVOLVED CRASHES

ROAD INCLINE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
LEVEL	0	0.0	29	72.5	112	78.3	141	76.6
HILL	1	100.0	11	27.5	28	19.6	40	21.7
CREST	0	0.0	0	0.0	3	2.1	3	1.6
UNKNOWN	0	-	1	-	1	-	2	-
TOTAL	1	100.0	41	100.0	144	100.0	186	100.0

TABLE 4.0.6

1997 AMBULANCE INVOLVED CRASHES
ROAD CONDITIONS BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
DRY	1	100.0	29	70.7	104	72.2	134	72.0
WET	0	0.0	9	22.0	29	20.1	38	20.4
SNOW	0	0.0	2	4.9	4	2.8	6	3.2
ICE	0	0.0	1	2.4	7	4.9	8	4.3
MUD	0	0.0	0	0.0	0	0.0	0	0.0
UNKNOWN	0	-	0	-	0	-	0	-
TOTAL	1	100.0	41	100.0	144	100.0	186	100.0

TABLE 4.0.7

1997 AMBULANCE INVOLVED CRASHES
HIGHWAY CLASSIFICATION BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
INTERSTATE	0	0.0	5	12.2	14	9.7	19	10.2
U.S. HIGHWAY	0	0.0	10	24.4	13	9.0	23	12.4
STATE NUMBERED	1	100.0	6	14.6	18	12.5	25	13.4
SINGLE STATE LETTERED	0	0.0	2	4.9	5	3.5	7	3.8
DOUBLE STATE LETTERED	0	0.0	1	2.4	2	1.4	3	1.6
OUTER ROAD	0	0.0	0	0.0	1	0.7	1	0.5
COUNTY ROAD	0	0.0	0	0.0	5	3.5	5	2.7
CITY STREET	0	0.0	17	41.5	78	54.2	95	51.1
INTERSTATE LOOP	0	0.0	0	0.0	0	0.0	0	0.0
OTHER ¹	0	0.0	0	0.0	8	5.6	8	4.3
TOTAL	1	100.0	41	100.0	144	100.0	186	100.0

¹ "Other" includes types of roads that are maintained by the State as well as by local jurisdictions.

TABLE 4.0.8

1997 AMBULANCE INVOLVED CRASHES

HIGHWAY CLASSIFICATION BY AREA CLASSIFICATION AND CRASH SEVERITY

	URBAN								RURAL							
	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
INTERSTATE	0	0.0	2	8.3	9	8.7	11	8.7	0	0.0	3	17.7	5	12.2	8	13.6
U.S. HIGHWAY	0	0.0	2	8.3	6	5.8	8	6.3	0	0.0	8	47.1	7	17.1	15	25.4
STATE NUMBERED	0	0.0	2	8.3	6	5.8	8	6.3	1	100.0	4	23.5	12	29.3	17	28.8
SINGLE STATE LETTERED	0	0.0	1	4.2	2	1.9	3	2.4	0	0.0	1	5.9	3	7.3	4	6.8
DOUBLE STATE LETTERED	0	0.0	1	4.2	1	1.0	2	1.6	0	0.0	0	0.0	1	2.4	1	1.7
OUTER ROAD	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	2.4	1	1.7
COUNTY ROAD	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	5	12.2	5	8.5
CITY STREET	0	0.0	16	66.7	74	71.8	90	70.9	0	0.0	1	5.9	4	9.8	5	8.5
INTERSTATE LOOP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
OTHER ¹	0	0.0	0	0.0	5	4.9	5	3.9	0	0.0	0	0.0	3	7.3	3	5.1
TOTAL	0	0.0	24	100.0	103	100.0	127	100.0	1	100.0	17	100.0	41	100.0	59	100.0

¹"Other" includes types of roads that are maintained by the State as well as by local jurisdictions.

TABLE 4.0.9

**1997 AMBULANCE INVOLVED CRASHES
MONTH OF YEAR**

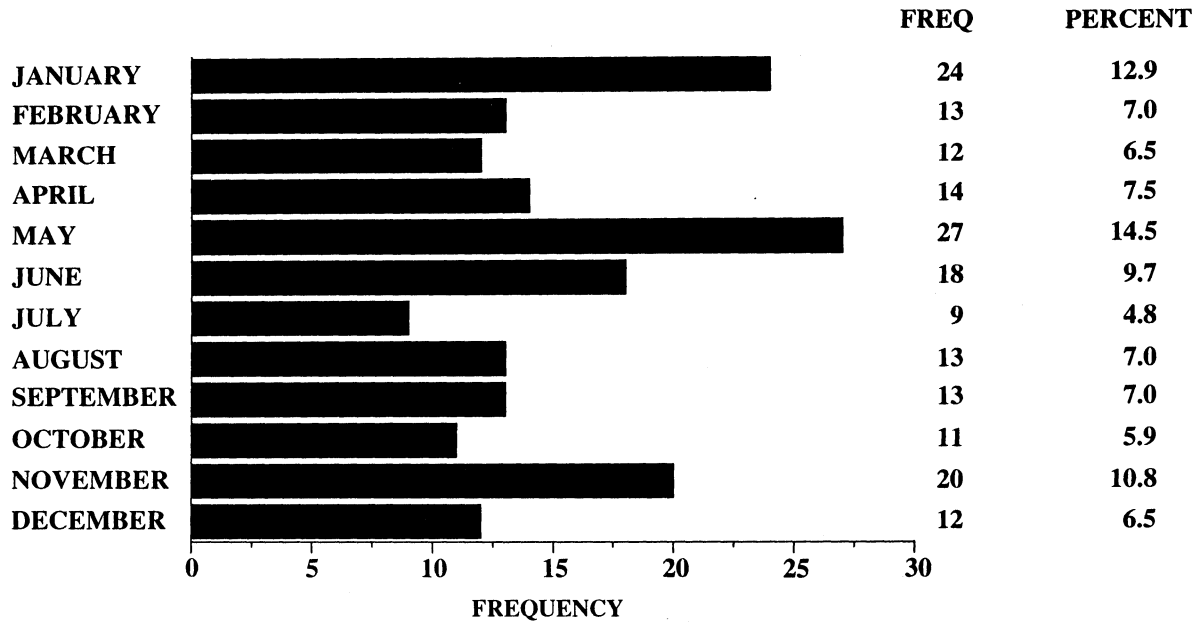


FIGURE 4.0.1

**1997 AMBULANCE INVOLVED CRASHES
DAY OF WEEK**

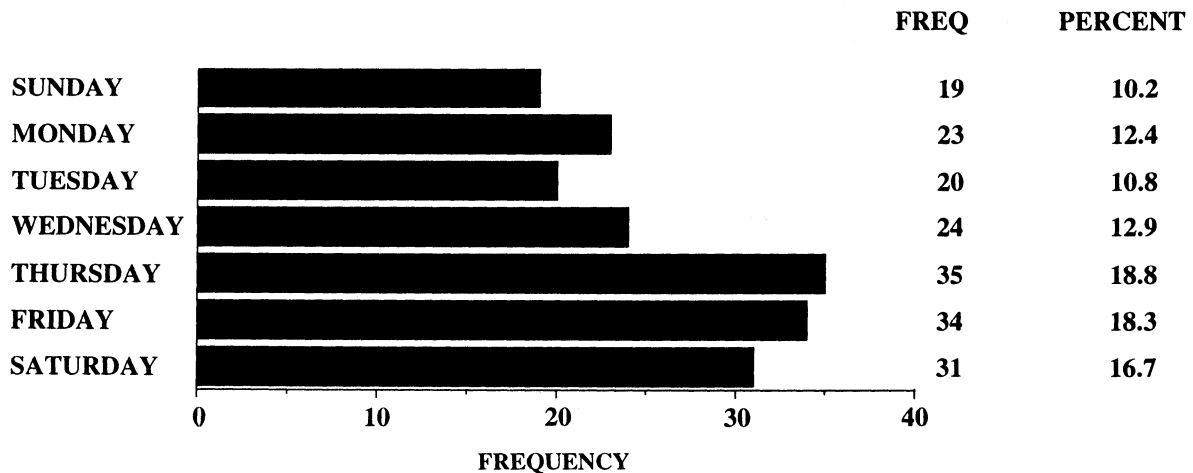
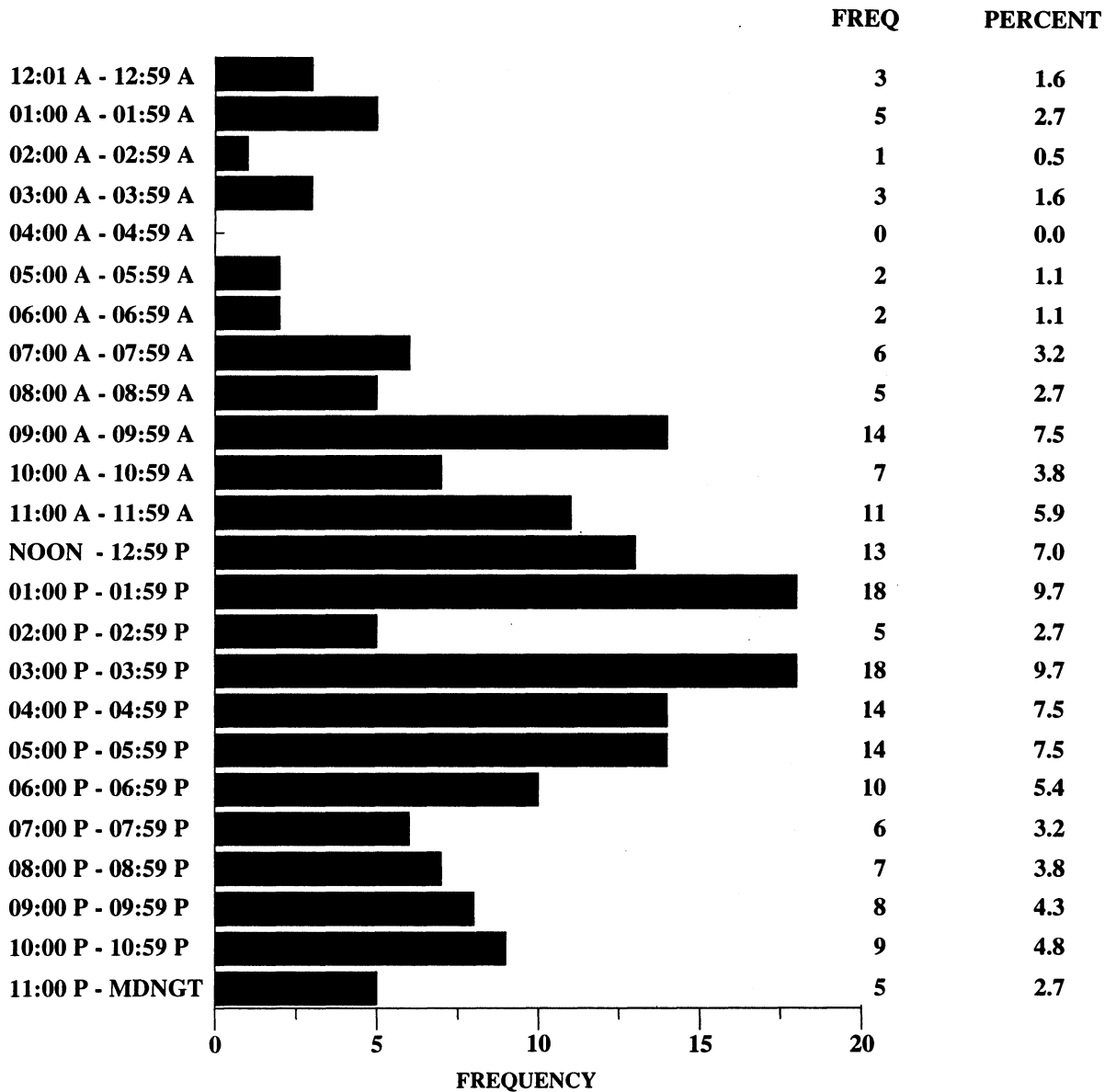


FIGURE 4.0.2

1997 AMBULANCE INVOLVED CRASHES HOUR OF DAY



UNKNOWN DATA NOT INCLUDED

FIGURE 4.0.3

1997 MISSOURI AMBULANCE CRASHES

TYPE OF CIRCUMSTANCE INVOLVED BY CRASH SEVERITY AND PERSON CLASSIFICATION¹

FATAL AND PERSONAL INJURY AMBULANCE CRASHES = 42				TOTAL AMBULANCE CRASHES = 186		
	DRIVER OF AMBULANCE/ VEHICLE	OTHER DRIVER/ VEHICLE/ PEDESTRIAN	TOTAL F & PI	DRIVER OF AMBULANCE/ VEHICLE	OTHER DRIVER/ VEHICLE/ PEDESTRIAN	TOTAL CRASHES
VEHICLE DEFECTS	2.4	2.4	4.8	1.1	1.1	2.2
ACCIDENT AHEAD	2.4	0.0	2.4	1.6	1.1	1.6
CONGESTION AHEAD	4.8	0.0	4.8	4.3	1.1	4.3
EXCEEDING SPEED LIMIT / TOO FAST FOR CONDITIONS	9.5	9.5	19.0	5.4	5.4	10.8
IMPROPER PASSING	2.4	0.0	2.4	1.1	2.2	3.2
VIOLATION OF STOP SIGN	4.8	4.8	9.5	1.6	2.7	4.3
WRONG SIDE NOT PASSING	0.0	2.4	2.4	0.0	0.5	0.5
FOLLOWING TOO CLOSE	2.4	7.1	9.5	1.6	4.8	6.5
IMPROPER SIGNAL	2.4	0.0	2.4	0.5	0.0	0.5
IMPROPER BACKING	0.0	0.0	0.0	2.2	0.0	2.2
IMPROPER TURN	2.4	4.8	7.1	1.6	1.6	3.2
IMPROPER LANE USAGE/ CHANGE	2.4	2.4	4.8	1.1	1.6	2.7
WRONG WAY ONE-WAY STREET	0.0	2.4	2.4	0.0	0.5	0.5
IMPROPER START FROM PARK	0.0	0.0	0.0	0.0	0.0	0.0
IMPROPERLY PARKED	0.0	2.4	2.4	1.1	0.5	1.6
FAILED TO YIELD	9.5	16.7	23.8	3.8	12.9	16.1
DRINKING	2.4	7.1	9.5	1.1	3.2	4.3
DRUGS	0.0	0.0	0.0	0.0	0.0	0.0
PHYSICAL IMPAIRMENT	0.0	0.0	0.0	0.0	0.5	0.5
INATTENTION	21.4	31.0	50.0	21.5	35.5	52.2

¹This table identifies the percentage of crashes involving one or more ambulances having a specific type of circumstance which contributed to the cause of the crash. This table further defines the percentage of crashes where the contributing circumstance was associated with the driver or his ambulance as well as those attributed to other persons and vehicles in the crash. For instance, when examining speed involvement in 1997 Missouri ambulance crashes, it was found that an ambulance driver was speeding in 5.4% of the crashes. In 5.4% of the crashes another driver was speeding. In 10.8% of the crashes either an ambulance driver, another driver, or both drivers were speeding.

TABLE 4.0.10

AMBULANCES INVOLVED IN 1997 MISSOURI CRASHES

DRIVER INVOLVEMENT BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
DRIVERLESS	0	0.0	1	2.4	8	5.5	9	4.8
KNOWN DRIVER INVOLVED	1	100.0	41	97.6	134	92.4	176	93.6
UNKNOWN DRIVER INVOLVED	0	0.0	0	0.0	3	2.1	3	1.6
TOTAL	1	100.0	42	100.0	145	100.0	188	100.0

TABLE 4.0.11

DRIVERS OF AMBULANCES INVOLVED IN 1997 MISSOURI CRASHES

SEX OF DRIVER BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
MALE	1	100.0	29	72.5	88	65.7	118	67.4
FEMALE	0	0.0	11	27.5	46	34.3	57	32.6
UNKNOWN	0	-	1	-	3	-	4	-
TOTAL	1	100.0	41	100.0	137	100.0	179	100.0

TABLE 4.0.12

DRIVERS OF AMBULANCES INVOLVED IN 1997 MISSOURI CRASHES

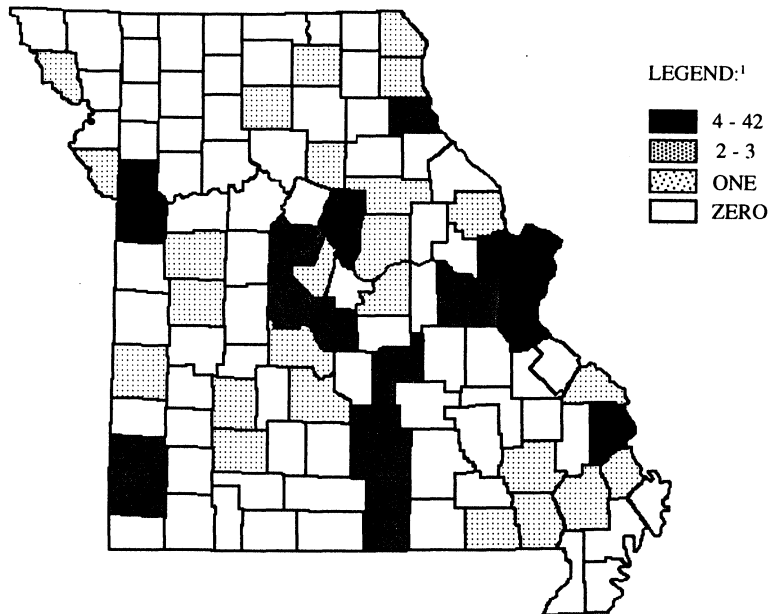
AGE OF DRIVER BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
AVERAGE AGE OF DRIVER	19.0	-	30.7	-	32.0	-	31.6	-
15 YEARS AND UNDER	0	0.0	0	0.0	0	0.0	0	0.0
16 - 20 YEARS	1	100.0	2	4.9	2	1.5	5	2.9
21 - 25 YEARS	0	0.0	13	31.7	34	26.0	47	27.2
26 - 30 YEARS	0	0.0	10	24.4	32	24.4	42	24.3
31 - 35 YEARS	0	0.0	7	17.1	22	16.8	29	16.8
36 - 40 YEARS	0	0.0	3	7.3	21	16.0	24	13.9
41 - 45 YEARS	0	0.0	2	4.9	10	7.6	12	6.9
46 - 50 YEARS	0	0.0	0	0.0	6	4.6	6	3.5
51 - 55 YEARS	0	0.0	2	4.9	2	1.5	4	2.3
56 - 60 YEARS	0	0.0	1	2.4	2	1.5	3	1.7
61 - 65 YEARS	0	0.0	1	2.4	0	0.0	1	0.6
66 YEARS AND OVER	0	0.0	0	0.0	0	0.0	0	0.0
UNKNOWN	0	-	0	-	6	-	6	-
TOTAL	1	100.0	41	100.0	137	100.0	179	100.0

TABLE 4.0.13

1997 AMBULANCE INVOLVED CRASHES

COUNTY QUARTILE ANALYSIS



¹LEGEND CATEGORIES ARE BASED ON QUARTILES OF COUNTIES.

RANK	COUNTY	FREQUENCY	PERCENT	RANK	COUNTY	FREQUENCY	PERCENT
1.0	ST. LOUIS CITY	42	22.6	15.5	PHELPS	2	1.1
2.0	JACKSON	38	20.4	15.5	TEXAS	2	1.1
3.0	ST. LOUIS	29	15.6	Second Quartile			
4.0	CLAY	7	3.8	Third Quartile			
5.5	JEFFERSON	6	3.2	31.5	ADAIR	1	0.5
5.5	ST. CHARLES	6	3.2	31.5	AUDRAIN	1	0.5
7.5	BOONE	4	2.2	31.5	BUTLER	1	0.5
7.5	CAPE GIRARDEAU	4	2.2	31.5	CALLAWAY	1	0.5
First Quartile				31.5	CAMDEN	1	0.5
Second Quartile				31.5	CLARK	1	0.5
10.5	FRANKLIN	3	1.6	31.5	GREENE	1	0.5
10.5	JASPER	3	1.6	31.5	HENRY	1	0.5
10.5	MILLER	3	1.6	31.5	HOLT	1	0.5
10.5	MORGAN	3	1.6	31.5	JOHNSON	1	0.5
15.5	COOPER	2	1.1	31.5	LACLEDE	1	0.5
15.5	HOWELL	2	1.1	31.5	LEWIS	1	0.5
15.5	MARION	2	1.1	31.5	LINCOLN	1	0.5
15.5	NEWTON	2	1.1	31.5	LINN	1	0.5

RANK	COUNTY	FREQUENCY	PERCENT	RANK	COUNTY	FREQUENCY	PERCENT
31.5	MONITEAU	1	0.5	80.0	HARRISON	0	0.0
31.5	OREGON	1	0.5	80.0	HICKORY	0	0.0
31.5	OSAGE	1	0.5	80.0	HOWARD	0	0.0
31.5	PERRY	1	0.5	80.0	IRON	0	0.0
31.5	PLATTE	1	0.5	80.0	KNOX	0	0.0
31.5	POLK	1	0.5	80.0	LAFAYETTE	0	0.0
31.5	RANDOLPH	1	0.5	80.0	LAWRENCE	0	0.0
31.5	RIPLEY	1	0.5	80.0	LIVINGSTON	0	0.0
31.5	SCOTT	1	0.5	80.0	MC DONALD	0	0.0
31.5	STODDARD	1	0.5	80.0	MACON	0	0.0
31.5	VERNON	1	0.5	80.0	MADISON	0	0.0
31.5	WAYNE	1	0.5	80.0	MARIES	0	0.0
Third Quartile				80.0	MERCER	0	0.0
Fourth Quartile				80.0	MISSISSIPPI	0	0.0
80.0	ANDREW	0	0.0	80.0	MONROE	0	0.0
80.0	ATCHISON	0	0.0	80.0	MONTGOMERY	0	0.0
80.0	BARRY	0	0.0	80.0	NEW MADRID	0	0.0
80.0	BARTON	0	0.0	80.0	NODAWAY	0	0.0
80.0	BATES	0	0.0	80.0	OZARK	0	0.0
80.0	BENTON	0	0.0	80.0	PEMISCOT	0	0.0
80.0	BOLLINGER	0	0.0	80.0	PETTIS	0	0.0
80.0	BUCHANAN	0	0.0	80.0	PIKE	0	0.0
80.0	CALDWELL	0	0.0	80.0	PULASKI	0	0.0
80.0	CARROLL	0	0.0	80.0	PUTNAM	0	0.0
80.0	CARTER	0	0.0	80.0	RALLS	0	0.0
80.0	CASS	0	0.0	80.0	RAY	0	0.0
80.0	CEDAR	0	0.0	80.0	REYNOLDS	0	0.0
80.0	CHARITON	0	0.0	80.0	ST. CLAIR	0	0.0
80.0	CHRISTIAN	0	0.0	80.0	ST. FRANCOIS	0	0.0
80.0	CLINTON	0	0.0	80.0	STE. GENEVIEVE	0	0.0
80.0	COLE	0	0.0	80.0	SALINE	0	0.0
80.0	CRAWFORD	0	0.0	80.0	SCHUYLER	0	0.0
80.0	DADE	0	0.0	80.0	SCOTLAND	0	0.0
80.0	DALLAS	0	0.0	80.0	SHANNON	0	0.0
80.0	DAVISS	0	0.0	80.0	SHELBY	0	0.0
80.0	DE KALB	0	0.0	80.0	STONE	0	0.0
80.0	DENT	0	0.0	80.0	SULLIVAN	0	0.0
80.0	DOUGLAS	0	0.0	80.0	TANEY	0	0.0
80.0	DUNKLIN	0	0.0	80.0	WARREN	0	0.0
80.0	GASCONADE	0	0.0	80.0	WASHINGTON	0	0.0
80.0	GENTRY	0	0.0	80.0	WEBSTER	0	0.0
80.0	GRUNDY	0	0.0	80.0	WORTH	0	0.0
				80.0	WRIGHT	0	0.0

TABLE 4.0.14

GLOSSARY

AMBULANCE INVOLVED TRAFFIC CRASH: Any crash in which one or more ambulances were directly involved in the incident.

EMERGENCY SERVICE VEHICLE INVOLVED TRAFFIC CRASH: Any crash in which one or more emergency service vehicles (i.e., police, fire, ambulance, and 'other' emergency service vehicle) were directly involved in the incident.

FATAL TRAFFIC CRASH: A crash in which one or more persons were killed as a result of the crash and their death(s) occurred within 30 days of the incident.

FIRE VEHICLE INVOLVED TRAFFIC CRASH: Any crash in which one or more fire vehicles were directly involved in the incident.

PERSONAL INJURY TRAFFIC CRASH: Any crash in which no person was killed but one or more persons were injured in the incident.

POLICE VEHICLE INVOLVED TRAFFIC CRASH: Any crash in which one or more police vehicles were directly involved in the incident.

PROPERTY DAMAGE TRAFFIC CRASH: Any crash in which no person was killed or injured but property was damaged in the incident.

QUARTILE: The value that marks the boundary between two consecutive intervals in a frequency distribution of four intervals with each containing one quarter of the total population.

RATE OF CHANGE: The formula is:

$$\frac{\text{Value in Current Period} - \text{Value in Base Period}}{\text{Value in Base Period}} \times 100$$

RURAL AREA: Any community of less than 5,000 population or an unincorporated area of the State.

URBAN AREA: Any community in the State having a population of 5,000 or more.

